

FINAL
RESOURCE CONSERVATION AND RECOVERY ACT
SOIL SAMPLING SUMMARY REPORT

COLLIS, INC.
CLINTON, IOWA
CONSENT AGREEMENT AND FINAL ORDER (CAFO)
DOCKET NUMBER: RCRA-07-2012-0014

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RCRA



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1.0 INTRODUCTION

Collis Incorporated (Collis) entered into a Consent Agreement and Final Order (CAFO) (Docket Number: Resource Conservation and Recovery Act [RCRA]-07-2012-0014) with the United States Environmental Protection Agency (USEPA) Region 7 on March 27, 2013. The CAFO was in settlement of EPA observations made during a June 2010 inspection of the Collis property, including regarding the exterior storage of totes containing process acids and caustics on concrete pavement areas adjacent to the filter building container storage area (CSA). The CAFO was also in settlement of violations of RCRA observed by USEPA during the September 2007 RCRA inspection. The CAFO states that the USEPA is interested in determining whether any releases occurred from the observed totes in excess of USEPA Industrial Soil Regional Screening Levels (RSLs) for metals.

As a result of the CAFO, Collis has completed a shallow soil investigation. Proposed boring locations identified in the *Pre-Soil Investigation Assessment (April 25, 2013)* for this investigation were based on the 2010 inspection information and developed in conjunction with the USEPA Region 7 project manager. The soil investigation was completed in accordance with the USEPA-approved *Final Sampling Work Plan for Focused Soil Investigation (February 2013)* (Work Plan) and the *Quality Assurance Project Plan (February 2013)* (QAPP); both of which are included as CAFO attachments, and the BB&E-approved *Health and Safety Plan (June 2013)* (HSP). Investigation activities were implemented on July 24, 2013, to assess possible releases from the storage totes into the adjacent soils. BB&E, LLC (BB&E) has prepared this *RCRA Soil Sampling Summary Report* to provide a summary of the findings of the investigation, as required by the Work Plan and to address specific compliance actions within the CAFO.

The Collis property is located at 2005 South 19th Street, Clinton, Clinton County, Iowa (**Figure 1**). Manufacturing has been conducted at the referenced site since the 1900s. Collis is engaged in the manufacturing of interior shelving, baskets, and accessories for major home appliance manufacturers, including General Electric, Whirlpool, Maytag, Amana, and Subzero.

The purpose of this shallow soils investigation is to determine whether any releases occurred from the totes observed during the 2010 USEPA inspection in excess of USEPA Industrial Soil

RSLs for metals. The investigation activities included the advancement of soil borings and collection of soil samples.

2.0 SAMPLING PLAN MODIFICATIONS

Several modifications of the Work Plan and QAPP occurred, as described below, based on field conditions or other best professional judgment:

- Analysis of Chromium VI was also performed by ALS Environmental Laboratory (Holland) on the former CSA shallow soil samples. In the approved Work Plan it states that samples will be analyzed for Chromium, with no distinction of Chromium VI or Chromium III. Since there is no analysis for Chromium III (it's measured as the difference between Chromium VI and total chromium), samples were analyzed for total chromium for which there is no RSL. In the approved QAPP, the RSL listed for chromium without speciation distinction is 5.6 mg/kg. All total chromium results are less than the RSL for Chromium III (150,000 mg/kg), but above the RSL for Chromium VI (5.6 mg/kg). Therefore, it was necessary to analyze the samples for Chromium VI to clarify a chromium speciation inconsistency between the approved Work Plan and the approved QAPP.
- Section 3.1 of the Work Plan states "...an effort to collect background soils that are similar in type to the soils at the former CSA will be made within the shallow soil sampling depth parameters of 0.5 ft to 1.0 ft below ground surface (bgs)". The background shallow soil samples were primarily composed of fine black to dark brown topsoil with minor sand and/or clay constituents. The former CSA shallow soil samples were primarily composed of aggregate materials, sand, fines, and topsoil. The background soils and some soils adjacent to the former CSA were dissimilar at the Work Plan specified depths.
- No soil samples were collected at soil boring locations COL-SB-CSA-9 or COL-SB-CSA-10. Approximately 4 inches to 6 inches below the bottom of the surface concrete a subsurface concrete pad was encountered, resulting in refusal. Soil samples were unable to be collected from the aggregate between the two concrete pavements since only minor amounts of soil materials were observed.
- No soil samples were collected at soil boring locations COL-SB-CSA-11, COL-SB-CSA-12, and COL-SB-CSA-13. After coring through approximately 6 inches

of concrete, aggregate was encountered. Soil borings were advanced to approximately 12 inches below the bottom of the concrete, and only aggregate with very little soil was encountered. Soil samples were unable to be collected since only aggregate with minor soil materials were observed.

- An extra soil boring location (COL-SB-CSA-15) was requested by the USEPA representative on-site at the former CSA. This soil boring was advanced and a soil sample was collected for analysis of metals. This extra sample was not contained in the QAPP, Table 1 – Summary of Sampling and Analysis Program.
- Per the QAPP, quality assurance samples including matrix spike/matrix spike duplicate (MS/MSD), duplicate, and equipment rinsate blank, were proposed at soil boring location COL-SB-CSA-10. Due to the refusal encountered at this location and lack of soil media available at COL-SB-CSA-11, COL-SB-CSA-12, and COL-SB-CSA-13, the quality assurance samples were collected at soil boring location COL-SB-CSA-15.

3.0 FIELD ACTIVITIES SUMMARY

As shown on **Figures 2 and 3**, a total of twenty-two (22) soil borings were advanced during sampling activities. All twenty-two (22) soil borings were advanced with a manual hand auger. At locations where concrete was present, the concrete was cored prior to advancing the borings.

The USEPA-approved Work Plan outlined an approach of fieldwork progression to identify any areas potentially impacted at the former CSA and also background shallow soil sampling locations. The following sections detail field activities conducted at the former CSA and background areas.

3.1 PRE-SOIL INVESTIGATION ASSESSMENT

Prior to mobilization for soil investigation activities, Collis manufacturing personnel with input from BB&E and USEPA representatives, evaluated the area where the storage totes were located, as referenced in the CAFO. This evaluation included identifying potential migration routes through cracks or relief joints (joints) in the two concrete storage areas or via potential runoff due to the slope of the concrete storage areas, as well as areas where any of the storage totes were located off the concrete at the time of USEPA's 2010 inspection. It was recognized and agreed that a level of field discretion may be needed in determining the exact sampling locations prior to the sampling event.

Representatives of USEPA, Collis, and BB&E contributed in determining the final locations (*Pre-Soil Investigation Assessment – Final*, April 25, 2013). An on-site meeting was held prior to the sampling activities with the USEPA Region 7 representative, Collis, and BB&E on the afternoon of July 23, 2013 to determine and agree upon the final proposed soil boring locations at the former CSA.

3.2 SOIL SAMPLING AND ANALYSIS

Soil borings were advanced as shown on Figure 3, in accordance with the approved Work Plan. Adjacent to the east and west sides of the CSA, concrete was cored prior to advancing all borings in those locations which had a concrete surface (COL-SB-CSA-9, COL-SB-CSA-10, COL-SB-CSA-11, COL-SB-CSA-12, and COL-SB-CSA-13). BB&E personnel performed the hand augering and shallow soil sampling activities.

Soil samples submitted to the laboratory were placed in approved containers, labeled in accordance with the approved QAPP, and placed in a cooler for transport to ALS Laboratories in Holland, Michigan, via FedEx. As prescribed in the QAPP, RCRA metals and mercury were analyzed by ALS Environmental Laboratory using USEPA Method SW6020A and SW7471B, respectively. One deviation from the Work Plan and QAPP included ALS Laboratories analyzing the former CSA shallow soil samples for hexavalent chromium (USEPA Method 7196A) in addition to total chromium.

Borings were advanced to approximately 6 to 12 inches bgs to ensure proper shallow soil collection requirements were followed consistent with the Work Plan. No groundwater was encountered at any of the soil boring locations.

3.2.1 BACKGROUND SHALLOW SOIL SAMPLING

Seven (7) background soil borings were advanced and seven (7) background shallow soil samples were collected. The soils from each boring were logged into a soil boring log sheet (**Appendix A**) and inspected for any visual staining or detectable odors. **Figure 2** illustrates the seven background soil boring locations and the following soil conditions were recorded:

- Soil borings COL-SB-BKGD-01, COL-SB-BKGD-02, and COL-SB-BKGD-03 were advanced south of the manufacturing building, and the soil's primary characteristic was black to dark brown topsoil with trace amounts of clay.

- Soil borings COL-SB-BKGD-04 and COL-SB-BKGD-05 were advanced at the City of Clinton property northeast of the Collis facility, and the soil's primary characteristic was fine black topsoil with trace amounts of black silty clay.
- Soil borings COL-SB-BKGD-06 and COL-SB-BKGD-07 were advanced at the City of Clinton property northwest of the Collis property, and the soil's primary characteristic was fine black topsoil with trace amounts of silty clay and sand.

3.2.2 CONTAINER STORAGE AREA SHALLOW SOIL SAMPLING

Fifteen (15) former CSA soil borings were advanced and ten (10) soil samples were collected. The ten (10) soil samples were only collected at perimeter locations around the CSA concrete pavement areas (COL-SB-CSA-01 through COL-SB-CSA-08, COL-SB-CSA-14, and COL-SB-CSA-15). Four (4) soil borings (COL-SB-CSA-01 through COL-SB-CSA-04) were advanced along the edge of the western area of the concrete pavement, and six (6) soil borings (COL-SB-CSA-05 through COL-SB-CSA-08, COL-SB-CSA-14, and COL-SB-CSA-15) were advanced along the edge of the eastern area of the concrete pavement.

A coring machine with a 6-in diameter bit was utilized to advance into 6-inch thick concrete for COL-SB-CSA-09 through COL-SB-CSA-13. No shallow soil samples were collected from COL-SB-CSA-09 through COL-SB-CSA-13, the five locations beneath the concrete, because of lack of soils encountered (as described below). Soil borings COL-SB-CSA-09 through COL-SB-CSA-11 locations were at the western concrete area, and soil boring COL-SB-CSA-12 and COL-SB-CSA-13 locations were at the eastern concrete area. **Figure 3** illustrates the former CSA soil boring locations.

At COL-SB-CSA-09 and COL-SB-CSA-10, aggregate was encountered beneath the surface concrete. Approximately 4 to 6 inches below the bottom of the surface concrete a subsurface concrete pad was encountered, resulting in refusal. No soil samples were collected at the COL-SB-CSA-09 and COL-SB-CSA-10 locations due to refusal and insufficient soil materials between the two concrete layers. This was an agreed deviation from the Work Plan and QAPP.

After coring through approximately 6 inches of concrete, aggregate was encountered at COL-SB-CSA-11, COL-SB-CSA-12, and COL-SB-CSA-13. Soil borings were advanced to approximately 12 inches below the bottom of the concrete (18 inches bgs). The subsurface materials were mostly aggregate of various sizes with a minor amount of sand and fines.

Samples at these three soil boring locations were unable to be collected since only aggregate with very little soil matrix was encountered.

The USEPA requested an additional soil boring along the eastern concrete area (COL-SB-CSA-15). A soil sample was collected at this location. This was an agreed deviation from the Work Plan and QAPP.

An MS/MSD, duplicate, and equipment rinsate blank, were proposed at soil boring location COL-SB-CSA-10. Due to the refusal encountered at this location and lack of soil media available at COL-SB-CSA-11, COL-SB-CSA-12, and COL-SB-CSA-13, the quality assurance samples were collected at COL-SB-CSA-15.

The following soil conditions were recorded:

- Soil borings COL-SB-CSA-01 through COL-SB-CSA-05 were advanced along the perimeter of the concrete pavement at the former CSA, and the soil's primary characteristics were a mixture of aggregates (various sizes), sand, and fines.
- Soil borings COL-SB-CSA-06 through COL-SB-CSA-08 and COL-SB-CSA-14 were advanced along the perimeter of the concrete pavement at the former CSA, and the soil's primary characteristic was brown topsoil with minor constituents of aggregate, sand, and fines.
- Soil borings COL-SB-CSA-11 through COL-SB-CSA-13 were cored and the borings were advanced below the concrete pavement. At depths up to 18 inches bgs, aggregate of various sizes with a trace amount of sand and fines were the primary soil types encountered.
- Soil boring COL-SB-CSA-15 was advanced along the perimeter of the concrete at the former CSA, and the soil's primary characteristic was light brown topsoil with minor amounts of sand.

3.3 DECONTAMINATION OF EQUIPMENT AND PERSONNEL

Proper equipment and personnel decontamination procedures were followed in accordance with Section 7.0 of the Work Plan and Section B2.4 of the QAPP during shallow soil sampling activities. As detailed in the QAPP, rinsate blanks (COL-RB-01, COL-RB-02, and COL-RB-03) were also collected and analyzed by ALS Environmental Laboratories. Total chromium was detected above the method detection limit in COL-RB-01 (0.010 mg/L). No other constituents were detected above method detection limits in the three rinsate blank samples.

3.4 INVESTIGATION-DERIVED WASTE MANAGEMENT

All investigation-derived waste (IDW) was handled in accordance with Section 8.0 of the Work Plan. Soil generated from hand augering activities was returned into the soil boring location after sampling activity completion. All personal protective equipment (PPE) and disposable sampling equipment was double-bagged and placed in an on-site municipal waste container to be disposed off-site.

3.5 SITE PHOTOGRAPHS

Photographs were taken during the investigation field activities and are presented in **Appendix B**.

3.6 PERMITS AND UTILITY CLEARANCE

The Iowa utility locator service (Iowa One Call) was contacted prior to conducting all invasive activities during the shallow soil sampling activities.

3.7 HEALTH AND SAFETY

Field activities were performed in accordance with the HASP developed for the shallow soil sampling activities (BB&E, July 2013).

4.0 SHALLOW SOIL SAMPLE RESULTS

Former Container Storage Area – Ten borings were sampled adjacent to the concrete areas at the former CSA, COL-SB-CSA-01 through COL-SB-CSA-08 and COL-SB-CSA-14 and COL-SB-CSA-15. The analytical results collected from investigation activities are discussed below.

Six borings (COL-SB-CSA-01, COL-SB-CSA-05 through COL-SB-CSA-08, and COL-SB-CSA-15) exhibited arsenic concentrations above USEPA industrial soil RSL criteria

of 2.4 milligrams per kilograms (mg/kg). Two borings (COL-SB-CSA-02 and COL-SB-CSA-14) detected arsenic with results above the method detection limit (MDL), but below the industrial soil RSL criteria. Two borings (COL-SB-CSA-03 and COL-SB-CSA-04) had no detections for arsenic.

All ten borings exhibited barium concentrations above the MDL but below the industrial soil RSL criteria of 190,000 mg/kg. Seven borings (COL-SB-CSA-01 through COL-SB-CSA-03, COL-SB-CSA-05 through COL-SB-CSA-08) exhibited cadmium concentrations above the MDL but below the industrial soil RSL criteria of 800 mg/kg. Ten borings exhibited total chromium concentrations, but there are no comparable industrial soil RSL criteria for these analyses; therefore, hexavalent chromium analyses were performed on the former CSA shallow soil samples. Only COL-SB-CSA-01, COL-SB-CSA-02, COL-SB-CSA-03, COL-SB-CSA-05, COL-SB-CSA-07, and COL-SB-CSA-15 detected hexavalent chromium concentrations above the MDL but all were below the industrial soil RSL criteria of 5.6 mg/kg. All ten borings exhibited lead concentrations above the MDL but below the industrial soil RSL criteria of 800 mg/kg. Seven borings exhibited mercury concentrations above the MDL but below the industrial soil RSL criteria of 43 mg/kg. No selenium or silver concentrations were detected in any of the ten borings.

Background Areas – Per the Work Plan, background shallow soil samples were only analyzed for analytes which exceeded industrial soil RSL criteria, in this case arsenic. The arsenic background detections are contained in **Table 1**. The background samples were analyzed to determine an arsenic site-specific background concentration utilizing USEPA ProUCL software. The 95% upper confidence limit (95%UCL) generated was 4.492 mg/kg from the seven background sample's analytical data. The statistical analysis completed by ProUCL is provided in **Appendix D**. Only soil boring COL-SB-CSA-15 had a detection greater than the 95%UCL background concentration (8.1 mg/kg). No additional background shallow soil samples were analyzed since only potential arsenic exceedances were identified from the soil analyses.

The analytical results collected from investigation activities are summarized in **Table 1**. The complete laboratory analytical reports are provided in **Appendix C**.

5.0 CONCLUSION

The field activities completed satisfied the Work Plan, as modified in the field, as adjacent soils to the former CSA were investigated consistent with the CAFO requirements.

No exceedances of USEPA industrial soil RSL criteria (May 2013) for barium, cadmium, hexavalent chromium, total chromium, lead, selenium, silver, and mercury were identified during the shallow soil investigation at the former CSA adjacent to the filter building at the Collis property.

ProUCL software was utilized to generate a shallow soil arsenic site-specific background concentration of 4.492 mg/kg. Arsenic concentrations detected in six (6) of the seven (7) background sampled collected area were less than the site specific background concentration of 4.492 mg/kg. Previously, ProUCL software was also used to generate a shallow soil arsenic site-specific background concentration of 6.816 mg/kg (*RCRA Facility Investigation Report*, November 2010). Only soil boring COL-SB-CSA-15 had a detection greater than the 95%UCL background concentration (8.1 mg/kg). An Iowa Department of Natural Resources (IDNR) shallow soil (0 – 8 inches bgs) sample state survey illustrated a background arsenic concentration of 10 mg/kg in Clinton, Iowa (*The Iowa State-Wide Trace Element Soil Sampling Project: Design and Implementation*, June 2010). A statewide survey performed by the Iowa Geological Society determined that the state-specific shallow (less than 12 inches bgs) soil arsenic background concentration was 17 mg/kg (*Explanation of Risk Assessments and Development of Risk-Based Standards*, May 2013). The arsenic detection at soil boring COL-SB-CSA-15 is slightly higher than site-specific background arsenic concentrations calculated as part of this investigation and the RCRA Facility Investigation, and therefore is considered attributable to background rather than any on-site industrial activities.

6.0 RECOMMENDATIONS

The purpose of this shallow soil investigation action was to perform an evaluation of soil at the former CSA adjacent to the filter building at the Collis property in satisfaction of the CAFO requirements. During a 2010 USEPA Region 7 RCRA inspection, storage of totes containing process acids and caustics on and near the CSA concrete areas was observed. Based on the results described previously, no additional investigation of the RCRA metals barium, cadmium,

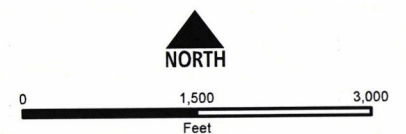
hexavalent chromium, total chromium, lead, selenium, silver, and mercury is required for the purposes of this CAFO. The arsenic detections above USEPA industrial soil RSL criteria are attributable to background, therefore, no additional investigation activities are required for the purposes of this CAFO.

Based on the results of soil sampling, no further action (NFA) is recommended, and Collis requests that USEPA consider the former CSA site for closure and satisfaction of this CAFO requirement.

FIGURES



Figure 1
 Site Location Map
 Collis, Inc. Manufacturing Facility
 Clinton, Iowa



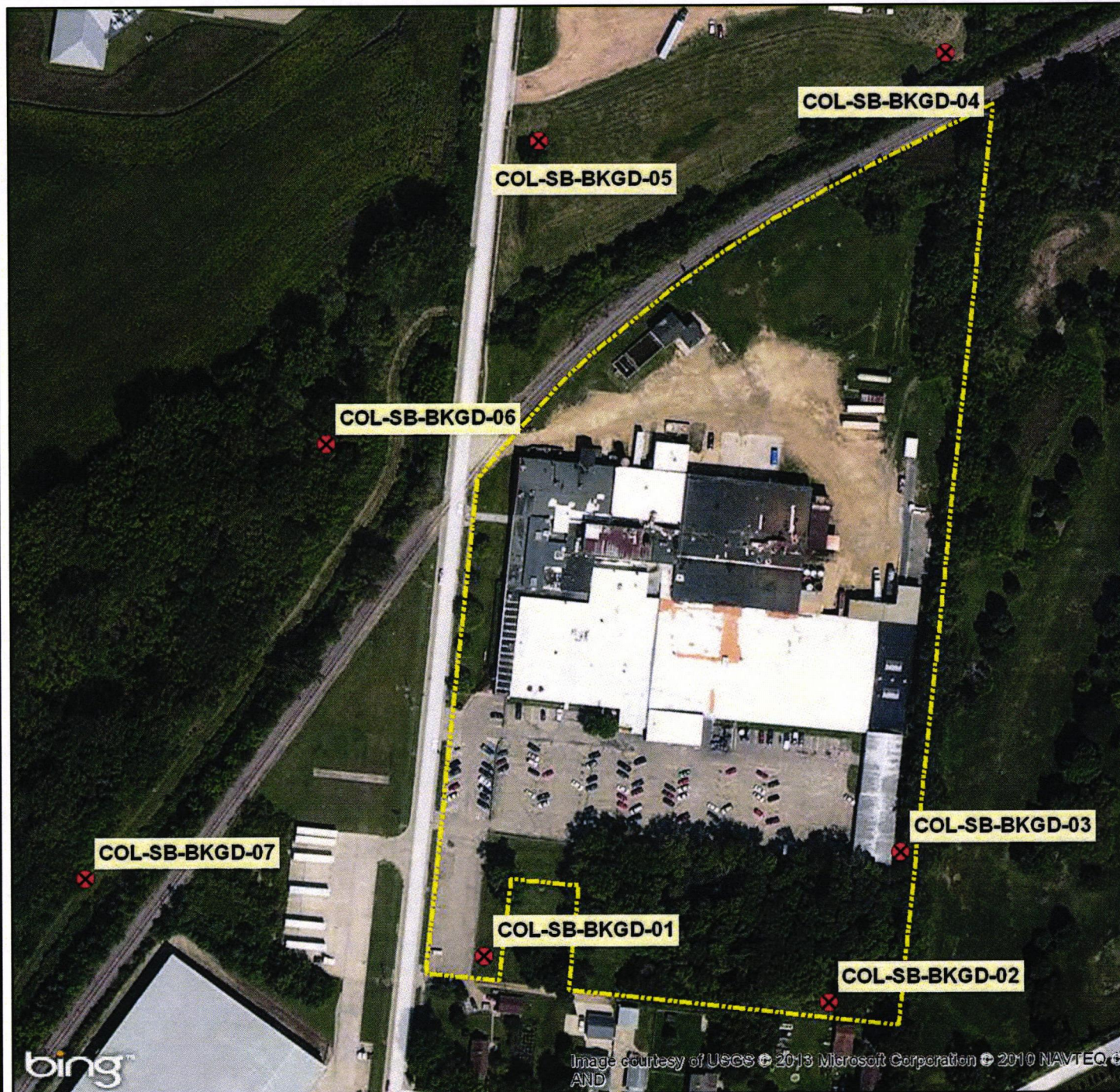


Figure 2

Background Shallow Soil Boring
Location Map

Resource Conservation and
Recovery Act Soil Sampling
Investigation

Collis, Inc. Manufacturing Facility
Clinton, Iowa

Legend

- ✕ Background Soil Borings
- ▭ Property Boundary

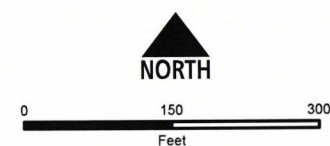




Figure 3

Container Storage Area
Shallow Soil Boring Location Map

Resource Conservation and
Recovery Act Soil Sampling
Investigation

Collis, Inc. Manufacturing Facility
Clinton, Iowa

Legend:

- ✖ Container Storage Area Soil Borings
- Concrete Pad - Former Container Storage Area
- Manufacturer's Ditch
- Property Boundary (Approximate)

TABLES

TABLE 1
SHALLOW SOIL SAMPLE SUMMARY TABLE
JULY 2013
COLLIS INC.
Clinton Iowa

Container Storage Area Samples

Container Storage Area Samples													
Sample ID	COL-SB-CSA-01 (0.5-1.0')	COL-SB-CSA-02 (0.5-1.0')	COL-SB-CSA-03 (0.5-1.0')	COL-SB-CSA-04 (0.5-1.0')	COL-SB-CSA-05 (0.5-1.0')	COL-SB-CSA-05 (0.5-1.0')-DUP	COL-SB-CSA-06 (0.5-1.0')	COL-SB-CSA-07 (0.5-1.0')	COL-SB-CSA-08 (0.5-1.0')	COL-SB-CSA-14 (0.5-1.0')	COL-SB-CSA-15 (0.5-1.0')	COL-SB-CSA-15 (0.5-1.0')-DUP	
Borehole ID	COL-SB-CSA-01	COL-SB-CSA-03	COL-SB-CSA-03	COL-SB-CSA-04	COL-SB-CSA-05	COL-SB-CSA-05	COL-SB-CSA-06	COL-SB-CSA-07	COL-SB-CSA-08	COL-SB-CSA-14	COL-SB-CSA-15	COL-SB-CSA-15	
Date Sampled (mm/dd/yy)	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	
Date Analyzed (mm/dd/yy)	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	
Analyte	RSL (mg/kg)												
Arsenic	2.40	2.8 J	1.7 J	U	U	3.1 J	2.7 J	3.9 J	4.1 J	3.5 J	2.4 J	U	8.1 J
Barium	190,000	93	59	60	46	120	110	98	140	52	100	150	210
Cadmium (Diet)	800	3.5	2	1.5 J	1.2 J	2	2.6	3.1	2.6	4.1	.65 J	7.2 J	7.1 J
Chromium (VI)	5.60	.47 J	0.38	.21 J	U	0.57	.57 J	U	3.3	U	U	.56 J	U
Chromium (total)	N/A	4500	1300	240	960	1800	1700	4000	7800	3500	96	12000	9300
Lead	800	91	69	42	49	61	83	170	56	110	20	160	330
Selenium	5,100	U	U	U	U	U	9 J	U	U	.57 J	.54 J	U	U
Silver	5,100	.32 J	0.079	0.039	.065 J	.11 J	.11 J	.26 J	.38 J	1.7 J	.11 J	1.8 J	2.0 J
Mercury	.43	0.03	0.02	ND	ND	0.03	0.04	0.04	0.03	0.04	ND	0.05	0.04

Background Samples

Background Samples									
Sample ID	COL-SB-BKGD-01 (0.5-1.0')	COL-SB-BKGD-02 (0.5-1.0')	COL-SB-BKGD-03 (0.5-1.0')	COL-SB-BKGD-04 (0.5-1.0')	COL-SB-BKGD-05 (0.5-1.0')	COL-SB-BKGD-06 (0.5-1.0')	COL-SB-BKGD-06 (0.5-1.0')-DUP	COL-SB-BKGD-07 (0.5-1.0')	
Borehole ID	COL-SB-BKGD-01	COL-SB-BKGD-03	COL-SB-BKGD-03	COL-SB-BKGD-04	COL-SB-BKGD-05	COL-SB-BKGD-06	COL-SB-BKGD-06	COL-SB-BKGD-07	
Date Sampled (mm/dd/yy)	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	07/24/13	
Date Analyzed (mm/dd/yy)	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	07/26/13	
Analyte	RSL (mg/kg)								
Arsenic	5.3	3.8	2.3	5.0	3.5	3.4	3.9	2.0	

Calculated Site Specific Background Concentration

Analyte	(mg/kg)
Arsenic	4.492

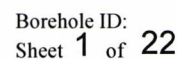
ProUCL Software Calculation

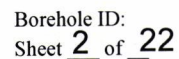
	Soil exceedance of industrial soil RSL criteria
	Soil exceedance of Calculated Site Specific Background Concentration

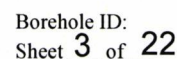
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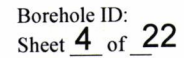
- All container storage area soil sampling analytical results are contained in this table.
- Only arsenic background soil sampling analytical results are contained in this table since only arsenic detections were identified above industrial soil RSL criteria.
- Only arsenic background concentrations were calculated since only arsenic background soil sampling analyses were performed.
- All samples are in units of milligrams per kilograms (mg/kg)
- RCRA 8 metals, mercury, and hexavalent chromium analyses were performed in accordance with USEPA Methods 6020A, 7471B, and 7196A, respectively.
- (0.5-1.0') indicates the depth of the sample collection feet below ground surface
- Abbreviations
 BKGD - background
 COL - Collis site
 CSA - container storage area
 ID - identification
 J - estimated value
 ND - non-detect
 RSL - Regional Screening Level (USEPA Region IX, updated May 2013)
 SB - soil boring
 U - analyte was not detected; associated value is quantitation limit
 USEPA - United States Environmental Protection Agency

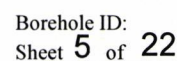
APPENDIX A

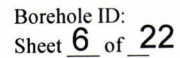


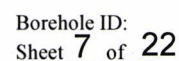


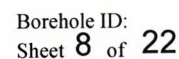




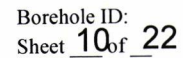


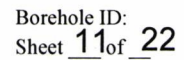


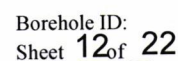


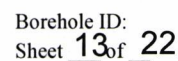


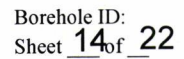
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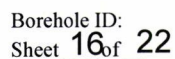


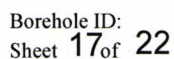


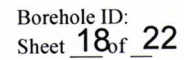


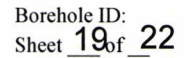


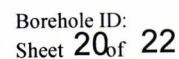
[illegible]



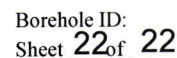








[illegible]



APPENDIX B

Appendix B
Photo Log
RCRA Soil Summary Report



Photo 1: Soil boring COL-SB-CSA-09 refusal



Photo 2: Soil boring COL-SB-CSA-15 constituents
(typical soil and aggregate composition along northern concrete pavement perimeter)

Appendix B
Photo Log
RCRA Soil Summary Report



Photo 3: Soil boring COL-SB-CSA-06
(typical sand and aggregate composition along southern concrete pavement perimeter)



Photo 4: Shallow soil sampling tools – hand auger, stainless steel trowel, stainless steel spoon

Appendix B
Photo Log
RCRA Soil Summary Report



Photo 5: Soil boring COL-SB-CSA-10 refusal



Photo 6: Soil borings COL-SB-CSA-12 and 13 aggregate constituents

Appendix B
Photo Log
RCRA Soil Summary Report



Photo 7: Soil boring COL-SB-CSA-11 aggregate constituents



Photo 8: Typical concrete pavement coring along joint

APPENDIX C



15-Aug-2013

Jason Cabra
BB&E, LLC
235 East Main Street
Suite 107
Northville, MI 48167

Re: **COLLIS Soil Sample**

Work Order: **13071003**

Dear Jason,

ALS Environmental received 23 samples on 26-Jul-2013 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 73.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Joseph Ribar".

Electronically approved by: Joseph Ribar

Joseph Ribar
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: BB&E, LLC
Project: COLLIS Soil Sample
Work Order: 13071003

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
13071003-01	COL-SB-CSA-01 (0.5'-1.0')	Soil		7/24/2013 10:50	7/26/2013 09:30	<input type="checkbox"/>
13071003-02	COL-SB-CSA-02 (0.5'-1.0')	Soil		7/24/2013 11:25	7/26/2013 09:30	<input type="checkbox"/>
13071003-03	COL-SB-CSA-03 (0.5'-1.0')	Soil		7/24/2013 11:50	7/26/2013 09:30	<input type="checkbox"/>
13071003-04	COL-SB-CSA-04 (0.5'-1.0')	Soil		7/24/2013 13:10	7/26/2013 09:30	<input type="checkbox"/>
13071003-05	COL-SB-CSA-05 (0.5'-1.0')	Soil		7/24/2013 13:45	7/26/2013 09:30	<input type="checkbox"/>
13071003-06	COL-SB-CSA-05 (0.5'-1.0')-DUP	Soil		7/24/2013 13:45	7/26/2013 09:30	<input type="checkbox"/>
13071003-07	COL-SB-CSA-06 (0.5'-1.0')	Soil		7/24/2013 14:30	7/26/2013 09:30	<input type="checkbox"/>
13071003-08	COL-SB-CSA-07 (0.5'-1.0')	Soil		7/24/2013 14:45	7/26/2013 09:30	<input type="checkbox"/>
13071003-09	COL-SB-CSA-08 (0.5'-1.0')	Soil		7/24/2013 15:10	7/26/2013 09:30	<input type="checkbox"/>
13071003-10	COL-SB-CSA-15 (0.5'-1.0')	Soil		7/24/2013 17:50	7/26/2013 09:30	<input type="checkbox"/>
13071003-11	COL-SB-CSA-15 (0.5'-1.0')-DUP	Soil		7/24/2013 17:50	7/26/2013 09:30	<input type="checkbox"/>
13071003-12	COL-SB-CSA-14 (0.5'-1.0')	Soil		7/24/2013 15:30	7/26/2013 09:30	<input type="checkbox"/>
13071003-13	COL-RB-C2	Water		7/24/2013 14:00	7/26/2013 09:30	<input type="checkbox"/>
13071003-14	COL-RB-C3	Water		7/24/2013 18:15	7/26/2013 09:30	<input type="checkbox"/>
13071003-15	COL-SB-BKGD-01 (05'-1.0')	Soil		7/24/2013 07:10	7/26/2013 09:30	<input checked="" type="checkbox"/>
13071003-16	COL-SB-BKGD-02 (05'-1.0')	Soil		7/24/2013 07:30	7/26/2013 09:30	<input checked="" type="checkbox"/>
13071003-17	COL-SB-BKGD-03 (05'-1.0')	Soil		7/24/2013 08:25	7/26/2013 09:30	<input checked="" type="checkbox"/>
13071003-18	COL-SB-BKGD-04 (05'-1.0')	Soil		7/24/2013 08:50	7/26/2013 09:30	<input checked="" type="checkbox"/>
13071003-19	COL-SB-BKGD-05 (05'-1.0')	Soil		7/24/2013 09:07	7/26/2013 09:30	<input checked="" type="checkbox"/>
13071003-20	COL-SB-BKGD-06 (05'-1.0')	Soil		7/24/2013 09:40	7/26/2013 09:30	<input checked="" type="checkbox"/>
13071003-21	COL-SB-BKGD-07 (05'-1.0')	Soil		7/24/2013 10:15	7/26/2013 09:30	<input checked="" type="checkbox"/>
13071003-22	COL-SB-BKGD-06 (05'-1.0')-DUP	Soil		7/24/2013 09:40	7/26/2013 09:30	<input checked="" type="checkbox"/>
13071003-23	COL-RB-01	Water		7/24/2013 10:00	7/26/2013 09:30	<input type="checkbox"/>

Client: BB&E, LLC
Project: COLLIS Soil Sample
Work Order: 13071003

Case Narrative

Samples for the above noted Work Order were received on 07/26/2013. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Metals:

Batch 50285, Method 6020, Sample 13071003-10AMS: The MS and/or MSD recovery was below the control limit. The corresponding result in the parent sample may be biased low: Selenium

Batch 50285, Method 6020, Sample 13071003-10AMS: The MS and/or MSD recovery was outside of the control; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for these elements: Ba, Cr, Cu, Pb, Zn

Batch 50486, Hexavalent Chromium, Method 7196A, Sample 13071003-10A MS: The MS and MSD recoveries were below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte.

Wet Chemistry:

No deviations or anomalies noted.

Client: BB&E, LLC
Project: COLLIS Soil Sample
WorkOrder: 13071003

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
as noted	
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-SB-CSA-01 (0.5'-1.0')
Collection Date: 7/24/2013 10:50 AM

Work Order: 13071003
Lab ID: 13071003-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
METALS BY ICP-MS			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	2.8	J	5.2	mg/Kg-dry	10	8/6/2013 06:59 PM
Barium	93		5.2	mg/Kg-dry	10	8/6/2013 06:59 PM
Cadmium	3.5		2.1	mg/Kg-dry	10	8/6/2013 06:59 PM
Chromium	4,500		52	mg/Kg-dry	100	8/6/2013 06:53 PM
Lead	91		5.2	mg/Kg-dry	10	8/6/2013 06:59 PM
Selenium	U		5.2	mg/Kg-dry	10	8/6/2013 06:59 PM
Silver	0.32	J	5.2	mg/Kg-dry	10	8/6/2013 06:59 PM
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: ALS
Subcontracted Analyses	See report		as noted		1	8/6/2013
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 8/12/2013	Analyst: MB
Chromium, Hexavalent	0.47	J	0.68	mg/Kg-dry	1	8/13/2013 01:30 PM
MOISTURE			A2540 G			Analyst: BD
Moisture	25		0.050	% of sample	1	7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-SB-CSA-02 (0.5'-1.0')
Collection Date: 7/24/2013 11:25 AM

Work Order: 13071003
Lab ID: 13071003-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	1.7	J	3.9	mg/Kg-dry	10	8/6/2013 07:06 PM
Barium	59		3.9	mg/Kg-dry	10	8/6/2013 07:06 PM
Cadmium	2.0		1.6	mg/Kg-dry	10	8/6/2013 07:06 PM
Chromium	1,300		39	mg/Kg-dry	100	8/8/2013 06:35 PM
Lead	69		3.9	mg/Kg-dry	10	8/6/2013 07:06 PM
Selenium	U		3.9	mg/Kg-dry	10	8/6/2013 07:06 PM
Silver	0.079	J	3.9	mg/Kg-dry	10	8/6/2013 07:06 PM
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: ALS
Subcontracted Analyses	See report		as noted		1	8/6/2013
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 8/12/2013	Analyst: MB
Chromium, Hexavalent	0.38	J	0.55	mg/Kg-dry	1	8/13/2013 01:30 PM
MOISTURE			A2540 G			Analyst: BD
Moisture	8.3		0.050	% of sample	1	7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-SB-CSA-03 (0.5'-1.0')
Collection Date: 7/24/2013 11:50 AM

Work Order: 13071003
Lab ID: 13071003-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
METALS BY ICP-MS			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	U		3.6	mg/Kg-dry	10	8/6/2013 07:12 PM
Barium	60		3.6	mg/Kg-dry	10	8/6/2013 07:12 PM
Cadmium	1.5	J	1.5	mg/Kg-dry	10	8/6/2013 07:12 PM
Chromium	240		3.6	mg/Kg-dry	10	8/6/2013 07:12 PM
Lead	42		3.6	mg/Kg-dry	10	8/6/2013 07:12 PM
Selenium	U		3.6	mg/Kg-dry	10	8/6/2013 07:12 PM
Silver	0.039	J	3.6	mg/Kg-dry	10	8/6/2013 07:12 PM
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: ALS
Subcontracted Analyses	See report		as noted		1	8/6/2013
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 8/12/2013	Analyst: MB
Chromium, Hexavalent	0.21	J	0.55	mg/Kg-dry	1	8/13/2013 01:30 PM
MOISTURE			A2540 G			Analyst: BD
Moisture	7.2		0.050	% of sample	1	7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
 Project: COLLIS Soil Sample
 Sample ID: COL-SB-CSA-04 (0.5'-1.0')
 Collection Date: 7/24/2013 01:10 PM

Work Order: 13071003
 Lab ID: 13071003-04
 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	U		3.9	mg/Kg-dry	10	8/6/2013 07:18 PM
Barium	46		3.9	mg/Kg-dry	10	8/6/2013 07:18 PM
Cadmium	1.2	J	1.6	mg/Kg-dry	10	8/6/2013 07:18 PM
Chromium	960		3.9	mg/Kg-dry	10	8/6/2013 07:18 PM
Lead	49		3.9	mg/Kg-dry	10	8/6/2013 07:18 PM
Selenium	U		3.9	mg/Kg-dry	10	8/6/2013 07:18 PM
Silver	0.065	J	3.9	mg/Kg-dry	10	8/6/2013 07:18 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013
CHROMIUM, HEXAVALENT						
			SW7196A		Prep Date: 8/12/2013	Analyst: MB
Chromium, Hexavalent	U		0.54	mg/Kg-dry	1	8/13/2013 01:30 PM
MOISTURE						
			A2540 G			Analyst: BD
Moisture	7.7		0.050	% of sample	1	7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
 Project: COLLIS Soil Sample
 Sample ID: COL-SB-CSA-05 (0.5'-1.0')
 Collection Date: 7/24/2013 01:45 PM

Work Order: 13071003
 Lab ID: 13071003-05
 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	3.1	J	4.3	mg/Kg-dry	10	8/6/2013 07:31 PM
Barium	120		4.3	mg/Kg-dry	10	8/6/2013 07:31 PM
Cadmium	2.0		1.7	mg/Kg-dry	10	8/6/2013 07:31 PM
Chromium	1,800		43	mg/Kg-dry	100	8/6/2013 07:24 PM
Lead	61		4.3	mg/Kg-dry	10	8/6/2013 07:31 PM
Selenium	U		4.3	mg/Kg-dry	10	8/6/2013 07:31 PM
Silver	0.11	J	4.3	mg/Kg-dry	10	8/6/2013 07:31 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013
CHROMIUM, HEXAVALENT						
			SW7196A		Prep Date: 8/12/2013	Analyst: MB
Chromium, Hexavalent	0.57		0.57	mg/Kg-dry	1	8/13/2013 01:30 PM
MOISTURE						
			A2540 G			Analyst: BD
Moisture	11		0.050	% of sample	1	7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
 Project: COLLIS Soil Sample
 Sample ID: COL-SB-CSA-05 (0.5'-1.0')-DUP
 Collection Date: 7/24/2013 01:45 PM

Work Order: 13071003
 Lab ID: 13071003-06
 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	2.7	J	3.5	mg/Kg-dry	10	8/6/2013 08:02 PM
Barium	110		3.5	mg/Kg-dry	10	8/6/2013 08:02 PM
Cadmium	2.6		1.4	mg/Kg-dry	10	8/6/2013 08:02 PM
Chromium	1,700		35	mg/Kg-dry	100	8/6/2013 07:56 PM
Lead	83		3.5	mg/Kg-dry	10	8/6/2013 08:02 PM
Selenium	0.90	J	3.5	mg/Kg-dry	10	8/6/2013 08:02 PM
Silver	0.11	J	3.5	mg/Kg-dry	10	8/6/2013 08:02 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013
CHROMIUM, HEXAVALENT						
			SW7196A		Prep Date: 8/12/2013	Analyst: MB
Chromium, Hexavalent	0.57	J	0.57	mg/Kg-dry	1	8/13/2013 01:30 PM
MOISTURE						
			A2540 G			Analyst: BD
Moisture	11		0.050	% of sample	1	7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-SB-CSA-06 (0.5'-1.0')
Collection Date: 7/24/2013 02:30 PM

Work Order: 13071003
Lab ID: 13071003-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	3.9	J	4.4	mg/Kg-dry	10	8/6/2013 08:15 PM
Barium	98		4.4	mg/Kg-dry	10	8/6/2013 08:15 PM
Cadmium	3.1		1.7	mg/Kg-dry	10	8/6/2013 08:15 PM
Chromium	4,000		44	mg/Kg-dry	100	8/6/2013 08:09 PM
Lead	170		4.4	mg/Kg-dry	10	8/6/2013 08:15 PM
Selenium	U		4.4	mg/Kg-dry	10	8/6/2013 08:15 PM
Silver	0.26	J	4.4	mg/Kg-dry	10	8/6/2013 08:15 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013
CHROMIUM, HEXAVALENT						
Chromium, Hexavalent	U		SW7196A		Prep Date: 8/12/2013	Analyst: MB 8/13/2013 01:30 PM
			0.58	mg/Kg-dry	1	
MOISTURE						
Moisture	12		A2540 G			Analyst: BD 7/30/2013
			0.050	% of sample	1	

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp
Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-SB-CSA-07 (0.5'-1.0')
Collection Date: 7/24/2013 02:45 PM

Work Order: 13071003
Lab ID: 13071003-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	4.1	J	4.7	mg/Kg-dry	10	8/6/2013 08:27 PM
Barium	140		4.7	mg/Kg-dry	10	8/6/2013 08:27 PM
Cadmium	2.6		1.9	mg/Kg-dry	10	8/6/2013 08:27 PM
Chromium	7,800		47	mg/Kg-dry	100	8/6/2013 08:21 PM
Lead	56		4.7	mg/Kg-dry	10	8/6/2013 08:27 PM
Selenium	U		4.7	mg/Kg-dry	10	8/6/2013 08:27 PM
Silver	0.38	J	4.7	mg/Kg-dry	10	8/6/2013 08:27 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013
CHROMIUM, HEXAVALENT						
Chromium, Hexavalent	3.3		SW7196A	0.61 mg/Kg-dry	1	Prep Date: 8/12/2013 Analyst: MB 8/13/2013 01:30 PM
MOISTURE						
Moisture	17		A2540 G	0.050 % of sample	1	Analyst: BD 7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-SB-CSA-08 (0.5'-1.0')
Collection Date: 7/24/2013 03:10 PM

Work Order: 13071003
Lab ID: 13071003-09
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	3.5	J	4.4	mg/Kg-dry	10	8/6/2013 08:40 PM
Barium	52		4.4	mg/Kg-dry	10	8/6/2013 08:40 PM
Cadmium	4.1		1.8	mg/Kg-dry	10	8/6/2013 08:40 PM
Chromium	3,500		44	mg/Kg-dry	100	8/6/2013 08:33 PM
Lead	110		4.4	mg/Kg-dry	10	8/6/2013 08:40 PM
Selenium	0.57	J	4.4	mg/Kg-dry	10	8/6/2013 08:40 PM
Silver	1.7	J	4.4	mg/Kg-dry	10	8/6/2013 08:40 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013
CHROMIUM, HEXAVALENT						
Chromium, Hexavalent	U		SW7196A	3.1 mg/Kg-dry	Prep Date: 8/12/2013 5	Analyst: MB 8/13/2013 01:30 PM
MOISTURE						
Moisture	19		A2540 G	0.050 % of sample	1	Analyst: BD 7/30/2013 04:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
 Project: COLLIS Soil Sample
 Sample ID: COL-SB-CSA-15 (0.5'-1.0')
 Collection Date: 7/24/2013 05:50 PM

Work Order: 13071003
 Lab ID: 13071003-10
 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	U		55	mg/Kg-dry	100	8/6/2013 08:46 PM
Barium	150		55	mg/Kg-dry	100	8/6/2013 08:46 PM
Cadmium	7.2	J	22	mg/Kg-dry	100	8/6/2013 08:46 PM
Chromium	12,000		55	mg/Kg-dry	100	8/6/2013 08:46 PM
Lead	160		55	mg/Kg-dry	100	8/6/2013 08:46 PM
Selenium	U		55	mg/Kg-dry	100	8/6/2013 08:46 PM
Silver	1.8	J	55	mg/Kg-dry	100	8/6/2013 08:46 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013
CHROMIUM, HEXAVALENT						
			SW7196A		Prep Date: 8/12/2013	Analyst: MB
Chromium, Hexavalent	0.56	J	0.71	mg/Kg-dry	1	8/13/2013 01:30 PM
MOISTURE						
			A2540 G			Analyst: BD
Moisture	28		0.050	% of sample	1	7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-SB-CSA-15 (0.5'-1.0')-DUP
Collection Date: 7/24/2013 05:50 PM

Work Order: 13071003
Lab ID: 13071003-11
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	8.1	J	44	mg/Kg-dry	100	8/6/2013 10:47 PM
Barium	210		44	mg/Kg-dry	100	8/6/2013 10:47 PM
Cadmium	7.1	J	18	mg/Kg-dry	100	8/6/2013 10:47 PM
Chromium	9,300		44	mg/Kg-dry	100	8/6/2013 10:47 PM
Lead	330		44	mg/Kg-dry	100	8/6/2013 10:47 PM
Selenium	U		44	mg/Kg-dry	100	8/6/2013 10:47 PM
Silver	2.0	J	44	mg/Kg-dry	100	8/6/2013 10:47 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013
CHROMIUM, HEXAVALENT						
Chromium, Hexavalent	U		SW7196A	3.3 mg/Kg-dry	Prep Date: 8/12/2013 5	Analyst: MB 8/13/2013 01:30 PM
MOISTURE						
Moisture	23		A2540 G	0.050 % of sample	1	Analyst: BD 7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
 Project: COLLIS Soil Sample
 Sample ID: COL-SB-CSA-14 (0.5'-1.0')
 Collection Date: 7/24/2013 03:30 PM

Work Order: 13071003
 Lab ID: 13071003-12
 Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/5/2013	Analyst: ML
Arsenic	2.4	J	3.8	mg/Kg-dry	10	8/8/2013 06:41 PM
Barium	100		3.8	mg/Kg-dry	10	8/8/2013 06:41 PM
Cadmium	0.65	J	1.5	mg/Kg-dry	10	8/8/2013 06:41 PM
Chromium	96		3.8	mg/Kg-dry	10	8/8/2013 06:41 PM
Lead	20		3.8	mg/Kg-dry	10	8/8/2013 06:41 PM
Selenium	0.54	J	3.8	mg/Kg-dry	10	8/8/2013 06:41 PM
Silver	0.11	J	3.8	mg/Kg-dry	10	8/8/2013 06:41 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013
CHROMIUM, HEXAVALENT						
Chromium, Hexavalent	U		SW7196A	0.57 mg/Kg-dry	1	Prep Date: 8/12/2013 Analyst: MB 8/13/2013 01:30 PM
MOISTURE						
Moisture	13		A2540 G	0.050 % of sample	1	Analyst: BD 7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-RB-C2
Collection Date: 7/24/2013 02:00 PM

Work Order: 13071003
Lab ID: 13071003-13
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/2/2013	Analyst: ML
Arsenic	U		0.0050	mg/L	1	8/2/2013 06:19 PM
Barium	0.00012	J	0.0050	mg/L	1	8/2/2013 06:19 PM
Cadmium	U		0.0020	mg/L	1	8/2/2013 06:19 PM
Chromium	0.00085	J	0.0050	mg/L	1	8/2/2013 06:19 PM
Lead	0.000078	J	0.0050	mg/L	1	8/2/2013 06:19 PM
Selenium	U		0.0050	mg/L	1	8/5/2013 02:28 PM
Silver	U		0.0050	mg/L	1	8/2/2013 06:19 PM
SUBCONTRACTED ANALYSES						
			SUBCONTRACT			Analyst: ALS
Subcontracted Analyses	See report			as noted	1	8/6/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-RB-C3
Collection Date: 7/24/2013 06:15 PM

Work Order: 13071003
Lab ID: 13071003-14
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 8/2/2013	Analyst: ML
Arsenic	U		0.0050	mg/L	1	8/2/2013 06:24 PM
Barium	0.000063	J	0.0050	mg/L	1	8/2/2013 06:24 PM
Cadmium	U		0.0020	mg/L	1	8/2/2013 06:24 PM
Chromium	0.0010	J	0.0050	mg/L	1	8/2/2013 06:24 PM
Lead	0.000082	J	0.0050	mg/L	1	8/2/2013 06:24 PM
Selenium	U		0.0050	mg/L	1	8/5/2013 02:34 PM
Silver	U		0.0050	mg/L	1	8/2/2013 06:24 PM
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: ALS
Subcontracted Analyses	See report		as noted		1	8/6/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Project: COLLIS Soil Sample
Sample ID: COL-RB-01
Collection Date: 7/24/2013 10:00 AM

Work Order: 13071003
Lab ID: 13071003-23
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS						
			SW6020A		Prep Date: 8/12/2013	Analyst: RH
Arsenic	U		0.0050	mg/L	1	8/12/2013 11:20 PM
Barium	0.00025	J	0.0050	mg/L	1	8/12/2013 11:20 PM
Cadmium	0.000089	J	0.0020	mg/L	1	8/12/2013 11:20 PM
Chromium	0.010		0.0050	mg/L	1	8/12/2013 11:20 PM
Lead	0.0013	J	0.0050	mg/L	1	8/12/2013 11:20 PM
Selenium	U		0.0050	mg/L	1	8/12/2013 11:20 PM
Silver	U		0.0050	mg/L	1	8/12/2013 11:20 PM
SUBCONTRACTED ANALYSES						
Subcontracted Analyses	See report		SUBCONTRACT	as noted	1	Analyst: ALS 8/6/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.



August 6, 2013

Analytical Report for Service Request No: K1307716

Joe Ribar
ALS - Holland
3352 128th Avenue
Holland, MI 49424

RE: 13071003

Dear Joe:

Enclosed are the results of the samples submitted to our laboratory on August 02, 2013. For your reference, these analyses have been assigned our service request number K1307716.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3275. You may also contact me via Email at Chris.Leaf@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental


Chris Leaf
Project Manager

CL/mj

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2286
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L12-28
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Georgia DNR	http://www.gaepd.org/Documents/techguide_pcb.html#cel	881
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
Indiana DOH	http://www.in.gov/isdh/24859.htm	C-WA-01
ISO 17025	http://www.pjllabs.com/	L12-27
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	3016
Maine DHS	Not available	WA0035
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-368
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA35
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA200001
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	704427-08-TX
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C1203
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.caslab.com or at the accreditation bodies web site

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Subcontractor:
ALS Environmental
1317 South 13th Avenue
Kelso, WA 98626

TEL: (360) 577-7222
FAX: (360) 636-1068
Acct #:

CHAIN-OF-CUSTODY RECORD

Page 1 of 3

11307714

Date: 29-Jul-13
COC ID: 4148
Due D 07-Aug-13

Environmental

Salesperson **Brian Root**

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order	20-13071003	Project Name	13071003	A Subcontracted Analyses (SUBCONTRACT)												
Work Order		Project Number		B												
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C												
Send Report To	Joseph Ribar	Inv Attn	Accounts Payable	D												
Address	3352 128th Avenue	Address	3352 128th Avenue	E												
				F												
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G												
Phone	(616) 399-6070	Phone	(616) 399-6070	H												
Fax	(616) 399-6185	Fax	(616) 399-6185	I												
eMail Address	joe.ribar@alsglobal.com	eMail CC		J												

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
13071003-01B	COL-SB-CSA-01 (0.5'-1.0')	Soil	24/Jul/2013 10:50	(1) 4OZGNEAT	X									
13071003-02B	COL-SB-CSA-02 (0.5'-1.0')	Soil	24/Jul/2013 11:25	(1) 4OZGNEAT	X									
13071003-03B	COL-SB-CSA-03 (0.5'-1.0')	Soil	24/Jul/2013 11:50	(1) 4OZGNEAT	X									
13071003-04B	COL-SB-CSA-04 (0.5'-1.0')	Soil	24/Jul/2013 13:10	(1) 4OZGNEAT	X									
13071003-05B	COL-SB-CSA-05 (0.5'-1.0')	Soil	24/Jul/2013 13:45	(1) 4OZGNEAT	X									
13071003-06B	COL-SB-CSA-05 (0.5'-1.0')- DUP	Soil	24/Jul/2013 13:45	(1) 4OZGNEAT	X									
13071003-07B	COL-SB-CSA-06 (0.5'-1.0')	Soil	24/Jul/2013 14:30	(1) 4OZGNEAT	X									
13071003-08B	COL-SB-CSA-07 (0.5'-1.0')	Soil	24/Jul/2013 14:45	(1) 4OZGNEAT	X									
13071003-09B	COL-SB-CSA-08 (0.5'-1.0')	Soil	24/Jul/2013 15:10	(1) 4OZGNEAT	X									
13071003-10B	COL-SB-CSA-15 (0.5'-1.0')	Soil	24/Jul/2013 17:50	(1) 4OZGNEAT	X									
13071003-11B	COL-SB-CSA-15 (0.5'-1.0')- DUP	Soil	24/Jul/2013 17:50	(1) 4OZGNEAT	X									
13071003-12B	COL-SB-CSA-14 (0.5'-1.0')	Soil	24/Jul/2013 15:30	(1) 4OZGNEAT	X									
13071003-13B	COL-RB-C2	Soil	24/Jul/2013 14:00	(1) 4OZGNEAT	X									

Comments:

Please analyze the following samples for Mercury by 7471B. Thank you.

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time



Environmental

Subcontractor:

ALS Environmental

1317 South 13th Avenue

Kelso, WA 98626

TEL: (360) 577-7222

FAX: (360) 636-1068

Acct #:

CHAIN-OF-CUSTODY RECORD

Page 2 of 3

Date: 29-Jul-13

COC ID: 4148

Due D 07-Aug-13

K1307714

Salesperson

Brian Root

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order	20-13071003	Project Name	13071003	A Subcontracted Analyses (SUBCONTRACT)												
Work Order		Project Number		B												
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C												
Send Report To	Joseph Ribar	Inv Attn	Accounts Payable	D												
Address	3352 128th Avenue	Address	3352 128th Avenue	E												
				F												
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G												
Phone	(616) 399-6070	Phone	(616) 399-6070	H												
Fax	(616) 399-6185	Fax	(616) 399-6185	I												
eMail Address	joe.ribar@alsglobal.com	eMail CC		J												

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
13071003-14B	COL-RB-C3	Soil	24/Jul/2013 18:15	(1) 4OZGNEAT	X									
13071003-15B	COL-SB-BKGD-01 (05'-1.0')	Soil	24/Jul/2013 7:10	(1) 4OZGNEAT	X									
13071003-16B	COL-SB-BKGD-02 (05'-1.0')	Soil	24/Jul/2013 7:30	(1) 4OZGNEAT	X									
13071003-17B	COL-SB-BKGD-03 (05'-1.0')	Soil	24/Jul/2013 8:25	(1) 4OZGNEAT	X									
13071003-18B	COL-SB-BKGD-04 (05'-1.0')	Soil	24/Jul/2013 8:50	(1) 4OZGNEAT	X									
13071003-19B	COL-SB-BKGD-05 (05'-1.0')	Soil	24/Jul/2013 9:07	(1) 4OZGNEAT	X									
13071003-20B	COL-SB-BKGD-06 (05'-1.0')	Soil	24/Jul/2013 9:40	(1) 4OZGNEAT	X									
13071003-21B	COL-SB-BKGD-07 (05'-1.0')	Soil	24/Jul/2013 10:15	(1) 4OZGNEAT	X									
13071003-22B	COL-SB-BKGD-06 (05'-1.0')-DUP	Soil	24/Jul/2013 9:40	(1) 4OZGNEAT	X									

Comments:

Please analyze the following samples for Mercury by 7471B. Thank you.

Relinquished by: *[Signature]*

Date/Time: *7/31/13 1550* Received by: *[Signature]*

Date/Time: *8/2/13 1000*

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time



Environmental

Subcontractor:

ALS Environmental
1317 South 13th Avenue
Kelso, WA 98626

TEL: (360) 577-7222
FAX: (360) 636-1068
Acct #:

CHAIN-OF-CUSTODY RECORD

Page 3 of 3

Date: 29-Jul-13
COC ID: 4148
Due D 07-Aug-13

K1307103

Salesperson

Brian Root

Customer Information		Project Information		Parameter/Method Request for Analysis											
Purchase Order	20-13071003	Project Name	13071003	A Subcontracted Analyses (SUBCONTRACT)											
Work Order		Project Number		B											
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C											
Send Report To	Joseph Ribar	Inv Attn	Accounts Payable	D											
Address	3352 128th Avenue	Address	3352 128th Avenue	E											
				F											
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G											
Phone	(616) 399-6070	Phone	(616) 399-6070	H											
Fax	(616) 399-6185	Fax	(616) 399-6185	I											
eMail Address	joe.ribar@alsglobal.com	eMail CC		J											
ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J	
★ 13071003-23B	COL-RB-01	Soil	24/Jul/2013 10:00	(1) 4OZGNEAT	X										

Comments:

Please analyze the following samples for Mercury by 7471B. Thank you.

Relinquished by:

7/31/13 1550
Date/Time

Received by:

8/2/13 1000
Date/Time

Cooler IDs

Report/QC Level
Std

Relinquished by:

Date/Time

Received by:

Date/Time

PC W

Cooler Receipt and Preservation Form

Client / Project: ALS Tullahoma Service Request K13 07716Received: 8/2/13 Opened: 8/2/13 By: Bu Unloaded: 8/2/13 By: Bu

1. Samples were received via? Mail (Fed Ex) UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
4.4	5.9	5.3	5.2	0	322	4148	0314 672 5467		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

RUSH

Notes, Discrepancies, & Resolutions:

13071003-13B, 13071003-14B, + 13071003-23B are waters,
not soils

ALS Group USA, Corp.
dba ALS Environmental

- Cover Page -

INORGANIC ANALYSIS DATA PACKAGE

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003

Service Request : K1307716

Sample Name :

Batch QC
Batch QC
13071003-13B
13071003-14B
13071003-23B
Laboratory Control Sample
Method Blank

Lab Code :

K1307615-001D
K1307615-001S
K1307716-013
K1307716-014
K1307716-023
K1307716-LCS
K1307716-MB

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Water

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-13B
Lab Code : K1307716-013

Units : ug/L (ppb)
Basis : NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7470A	0.2	08/06/13	ND	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Water

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-14B
Lab Code : K1307716-014

Units : ug/L (ppb)
Basis : NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7470A	0.2	08/06/13	ND	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Water

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-23B
Lab Code : K1307716-023

Units : ug/L (ppb)
Basis : NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7470A	0.2	08/06/13	ND	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Water

Service Request : K1307716
Date Collected : NA
Date Received : NA
Date Extracted : 08/06/13

Total Metals

Sample Name : Method Blank
Lab Code : K1307716-MB

Units : ug/L (ppb)
Basis : NA

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7470A	0.2	08/06/13	ND	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Water

Service Request : K1307716
Date Collected : NA
Date Received : NA
Date Extracted : 08/06/13
Date Analyzed : 08/06/13

Duplicate Summary
Dissolved Metals

Sample Name : Batch QC
Lab Code : K1307615-001D

Units : ug/L (ppb)
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Mercury	7470A	0.2	ND	ND	ND	-	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Water

Service Request : K1307716
Date Collected : NA
Date Received : NA
Date Extracted : 08/06/13
Date Analyzed : 08/06/13

Matrix Spike Summary
Dissolved Metals

Sample Name : Batch QC
Lab Code : K1307615-001S

Units : ug/L (ppb)
Basis : NA

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury	0.2	1.00	ND	0.9	90	80-120	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Water

Service Request : K1307716
Date Collected : NA
Date Received : NA
Date Extracted : 08/06/13
Date Analyzed : 08/06/13

Laboratory Control Sample Summary
Total Metals

Sample Name : Laboratory Control Sample
Lab Code : K1307716-LCS

Units : ug/L (ppb)
Basis : NA

Analyte	Analysis Method	True Value	Result	Percent	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury	7470A	5.00	5.0	100	83-117	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003

Service Request : K1307716

Sample Name :

13071003-01B
13071003-01B
13071003-01B
13071003-02B
13071003-03B
13071003-04B
13071003-05B
13071003-06B
13071003-07B
13071003-08B
13071003-09B
13071003-10B
13071003-11B
13071003-12B
Method Blank

Lab Code :

K1307716-001
K1307716-001D
K1307716-001S
K1307716-002
K1307716-003
K1307716-004
K1307716-005
K1307716-006
K1307716-007
K1307716-008
K1307716-009
K1307716-010
K1307716-011
K1307716-012
K1307716-MB

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-01B
Lab Code : K1307716-001

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	0.03	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-02B
Lab Code : K1307716-002

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	0.02	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-03B
Lab Code : K1307716-003

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	ND	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-04B
Lab Code : K1307716-004

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	ND	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-05B
Lab Code : K1307716-005

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	0.03	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-06B
Lab Code : K1307716-006

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	0.04	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-07B
Lab Code : K1307716-007

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	0.04	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-08B
Lab Code : K1307716-008

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	0.03	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-09B
Lab Code : K1307716-009

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	0.04	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-10B
Lab Code : K1307716-010

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	0.05	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-11B
Lab Code : K1307716-011

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	0.04	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13

Total Metals

Sample Name : 13071003-12B
Lab Code : K1307716-012

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	ND	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : NA
Date Received : NA
Date Extracted : 08/06/13

Total Metals

Sample Name : Method Blank
Lab Code : K1307716-MB

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Mercury	7471B	0.02	08/06/13	ND	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13
Date Analyzed : 08/06/13

Duplicate Summary
Total Metals

Sample Name : 13071003-01B
Lab Code : K1307716-001D

Units : mg/Kg (ppm)
Basis : As Received

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Mercury	7471B	0.02	0.03	0.03	0.03	<1	

Comments:

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client : ALS Environmental - Holland (MI)
Project Name : NA
Project No. : 13071003
Matrix : Soil

Service Request : K1307716
Date Collected : 07/24/13
Date Received : 08/02/13
Date Extracted : 08/06/13
Date Analyzed : 08/06/13

Matrix Spike Summary
Total Metals

Sample Name : 13071003-01B
Lab Code : K1307716-001S

Units : mg/Kg (ppm)
Basis : As Received

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Mercury	0.02	0.47	0.03	0.51	102	75-125	

Comments:

ALS Group USA, Corp

Date: 15-Aug-13

Client: BB&E, LLC
Work Order: 13071003
Project: COLLIS Soil Sample

QC BATCH REPORT

Batch ID: 50232 Instrument ID ICPMS2 Method: SW6020A

MBLK		Sample ID: MBLK-50232-50232				Units: mg/L		Analysis Date: 8/2/2013 05:52 PM		
Client ID:		Run ID: ICPMS2_130802A				SeqNo: 2401321		Prep Date: 8/2/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0050								
Barium	0.00008285	0.0050								J
Cadmium	U	0.0020								
Chromium	U	0.0050								
Lead	U	0.0050								
Silver	U	0.0050								

MBLK		Sample ID: MBLK-50232-50232				Units: mg/L		Analysis Date: 8/5/2013 02:12 PM		
Client ID:		Run ID: ICPMS2_130805A				SeqNo: 2402718		Prep Date: 8/2/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	U	0.0050								

LCS		Sample ID: LCS-50232-50232				Units: mg/L		Analysis Date: 8/2/2013 05:58 PM		
Client ID:		Run ID: ICPMS2_130802A				SeqNo: 2401322		Prep Date: 8/2/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.0963	0.0050	0.1	0	96.3	80-120	0			
Barium	0.09686	0.0050	0.1	0	96.9	80-120	0			
Cadmium	0.0953	0.0020	0.1	0	95.3	80-120	0			
Chromium	0.09031	0.0050	0.1	0	90.3	80-120	0			
Lead	0.09483	0.0050	0.1	0	94.8	80-120	0			
Silver	0.09672	0.0050	0.1	0	96.7	80-120	0			

LCS		Sample ID: LCS-50232-50232				Units: mg/L		Analysis Date: 8/5/2013 02:23 PM		
Client ID:		Run ID: ICPMS2_130805A				SeqNo: 2402719		Prep Date: 8/2/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.09941	0.0050	0.1	0	99.4	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, LLC
 Work Order: 13071003
 Project: COLLIS Soil Sample

QC BATCH REPORT

Batch ID: 50232 Instrument ID ICPMS2 Method: SW6020A

MS Sample ID: 1308011-01BMS				Units: mg/L		Analysis Date: 8/2/2013 08:39 PM				
Client ID:		Run ID: ICPMS2_130802A		SeqNo: 2402042		Prep Date: 8/2/2013		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09592	0.0050	0.1	-0.0001857	96.1	75-125	0			
Barium	0.09828	0.0050	0.1	0.00005277	98.2	75-125	0			
Cadmium	0.0968	0.0020	0.1	0.00002591	96.8	75-125	0			
Chromium	0.08972	0.0050	0.1	0.0001059	89.6	75-125	0			
Lead	0.09657	0.0050	0.1	0.00003287	96.5	75-125	0			
Silver	0.09641	0.0050	0.1	0.000003879	96.4	75-125	0			

MS Sample ID: 1308011-01BMS				Units: mg/L		Analysis Date: 8/5/2013 03:11 PM				
Client ID:		Run ID: ICPMS2_130805A		SeqNo: 2403118		Prep Date: 8/2/2013		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.09419	0.0050	0.1	-0.0004074	94.6	75-125	0			

MSD Sample ID: 1308011-01BMSD				Units: mg/L		Analysis Date: 8/2/2013 08:44 PM				
Client ID:		Run ID: ICPMS2_130802A		SeqNo: 2402043		Prep Date: 8/2/2013		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.0936	0.0050	0.1	-0.0001857	93.8	75-125	0.09592	2.45	20	
Barium	0.09497	0.0050	0.1	0.00005277	94.9	75-125	0.09828	3.43	20	
Cadmium	0.09338	0.0020	0.1	0.00002591	93.4	75-125	0.0968	3.6	20	
Chromium	0.0883	0.0050	0.1	0.0001059	88.2	75-125	0.08972	1.6	20	
Lead	0.09298	0.0050	0.1	0.00003287	92.9	75-125	0.09657	3.79	20	
Silver	0.09386	0.0050	0.1	0.000003879	93.9	75-125	0.09641	2.68	20	

MSD Sample ID: 1308011-01BMSD				Units: mg/L		Analysis Date: 8/5/2013 03:16 PM				
Client ID:		Run ID: ICPMS2_130805A		SeqNo: 2403119		Prep Date: 8/2/2013		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.09628	0.0050	0.1	-0.0004074	96.7	75-125	0.09419	2.19	20	

The following samples were analyzed in this batch:

13071003-13A	13071003-14A
--------------	--------------

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, LLC
 Work Order: 13071003
 Project: COLLIS Soil Sample

QC BATCH REPORT

Batch ID: 50285 Instrument ID ICPMS1 Method: SW6020A

MBLK		Sample ID: MBLK-50285-50285				Units: mg/Kg		Analysis Date: 8/6/2013 12:09 AM		
Client ID:		Run ID: ICPMS1_130805A				SeqNo: 2403730		Prep Date: 8/5/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.25								
Barium	U	0.25								
Cadmium	U	0.10								
Chromium	U	0.25								
Lead	U	0.25								
Selenium	U	0.25								
Silver	U	0.25								

LCS		Sample ID: LCS-50285-50285				Units: mg/Kg		Analysis Date: 8/6/2013 06:47 PM		
Client ID:		Run ID: ICPMS1_130806A				SeqNo: 2404750		Prep Date: 8/5/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.435	0.25	5	0	88.7	80-120	0			
Barium	4.812	0.25	5	0	96.2	80-120	0			
Cadmium	4.766	0.10	5	0	95.3	80-120	0			
Chromium	4.676	0.25	5	0	93.5	80-120	0			
Lead	4.951	0.25	5	0	99	80-120	0			
Selenium	4.317	0.25	5	0	86.3	80-120	0			
Silver	4.97	0.25	5	0	99.4	80-120	0			

MS		Sample ID: 13071003-10AMS				Units: mg/Kg		Analysis Date: 8/6/2013 08:52 PM		
Client ID: COL-SB-CSA-15 (0.5'-1.0')		Run ID: ICPMS1_130806A				SeqNo: 2404770		Prep Date: 8/5/2013		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	140	39	7.704	109.1	400	75-125	0			SO
Cadmium	14.14	15	7.704	5.152	117	75-125	0			J
Chromium	8613	39	7.704	8787	-2260	75-125	0			SO
Lead	152.5	39	7.704	112.8	515	75-125	0			SO
Selenium	U	39	7.704	-4.795	62.2	75-125	0			S
Silver	10.59	39	7.704	1.307	121	75-125	0			J

MS		Sample ID: 13071003-10AMS				Units: mg/Kg		Analysis Date: 8/6/2013 08:52 PM		
Client ID: COL-SB-CSA-15 (0.5'-1.0')		Run ID: ICPMS1_130806B				SeqNo: 2405471		Prep Date: 8/5/2013		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	14.27	39	7.704	5.341	116	75-125	0			J

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, LLC
 Work Order: 13071003
 Project: COLLIS Soil Sample

QC BATCH REPORT

Batch ID: 50285 Instrument ID ICPMS1 Method: SW6020A

MSD Sample ID: 13071003-10AMSD				Units: mg/Kg			Analysis Date: 8/6/2013 10:41 PM			
Client ID: COL-SB-CSA-15 (0.5'-1.0')				Run ID: ICPMS1_130806A		SeqNo: 2404805	Prep Date: 8/5/2013		DF: 100	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.51	40	8.013	-0.1094	145	75-125	3.553	0	25	JS
Barium	138.2	40	8.013	109.1	363	75-125	140	1.27	25	SO
Cadmium	14.87	16	8.013	5.152	121	75-125	14.14	0	25	J
Chromium	9391	40	8.013	8787	7530	75-125	8613	8.64	25	SO
Lead	160.3	40	8.013	112.8	594	75-125	152.5	5.03	25	SO
Silver	11.29	40	8.013	1.307	125	75-125	10.59	0	25	J

MSD Sample ID: 13071003-10AMSD				Units: mg/Kg			Analysis Date: 8/6/2013 10:41 PM			
Client ID: COL-SB-CSA-15 (0.5'-1.0')				Run ID: ICPMS1_130806B		SeqNo: 2405490	Prep Date: 8/5/2013		DF: 100	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	5.432	40	8.013	8.417	-37.3	75-125	-2.596	0	25	JS

The following samples were analyzed in this batch:

13071003-01A	13071003-02A	13071003-03A
13071003-04A	13071003-05A	13071003-06A
13071003-07A	13071003-08A	13071003-09A
13071003-10A	13071003-11A	13071003-12A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, LLC
 Work Order: 13071003
 Project: COLLIS Soil Sample

QC BATCH REPORT

Batch ID: 50461 Instrument ID ICPMS2 Method: SW6020A

MBLK		Sample ID: MBLK-50461-50461				Units: mg/L		Analysis Date: 8/12/2013 01:04 PM		
Client ID:		Run ID: ICPMS2_130812A				SeqNo: 2410930		Prep Date: 8/12/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0050								
Barium	U	0.0050								
Cadmium	U	0.0020								
Chromium	U	0.0050								
Lead	0.0001062	0.0050								J
Selenium	U	0.0050								
Silver	U	0.0050								

LCS		Sample ID: LCS-50461-50461				Units: mg/L		Analysis Date: 8/12/2013 01:09 PM		
Client ID:		Run ID: ICPMS2_130812A				SeqNo: 2410931		Prep Date: 8/12/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09674	0.0050	0.1	0	96.7	80-120	0			
Barium	0.09877	0.0050	0.1	0	98.8	80-120	0			
Cadmium	0.09943	0.0020	0.1	0	99.4	80-120	0			
Chromium	0.09267	0.0050	0.1	0	92.7	80-120	0			
Lead	0.09662	0.0050	0.1	0	96.6	80-120	0			
Selenium	0.09594	0.0050	0.1	0	95.9	80-120	0			
Silver	0.09935	0.0050	0.1	0	99.4	80-120	0			

MS		Sample ID: 1308307-04CMS				Units: mg/L		Analysis Date: 8/12/2013 02:31 PM		
Client ID:		Run ID: ICPMS2_130812A				SeqNo: 2410946		Prep Date: 8/12/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.1009	0.0050	0.1	0.0002623	101	75-125	0			
Barium	0.1264	0.0050	0.1	0.02828	98.1	75-125	0			
Cadmium	0.09833	0.0020	0.1	-0.0005867	98.9	75-125	0			
Chromium	0.09503	0.0050	0.1	0.00002875	95	75-125	0			
Lead	0.09801	0.0050	0.1	-8.611E-06	98	75-125	0			
Selenium	0.09947	0.0050	0.1	0.0003097	99.2	75-125	0			
Silver	0.09855	0.0050	0.1	0.000007721	98.5	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, LLC
Work Order: 13071003
Project: COLLIS Soil Sample

QC BATCH REPORT

Batch ID: 50461 Instrument ID ICPMS2 Method: SW6020A

MSD				Sample ID: 1308307-04CMSD			Units: mg/L		Analysis Date: 8/12/2013 01:20 PM	
Client ID:				Run ID: ICPMS2_130812A			SeqNo: 2410933		Prep Date: 8/12/2013	
DF: 1										
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.09919	0.0050	0.1	0.0002623	98.9	75-125	0.1009	1.71	20	
Barium	0.1306	0.0050	0.1	0.02828	102	75-125	0.1264	3.27	20	
Cadmium	0.1008	0.0020	0.1	-0.0005867	101	75-125	0.09833	2.48	20	
Chromium	0.09451	0.0050	0.1	0.00002875	94.5	75-125	0.09503	0.549	20	
Lead	0.09982	0.0050	0.1	-8.611E-06	99.8	75-125	0.09801	1.83	20	
Selenium	0.09724	0.0050	0.1	0.0003097	96.9	75-125	0.09947	2.27	20	
Silver	0.099	0.0050	0.1	0.000007721	99	75-125	0.09855	0.456	20	

The following samples were analyzed in this batch:

13071003-
23A

Client: BB&E, LLC
 Work Order: 13071003
 Project: COLLIS Soil Sample

QC BATCH REPORT

Batch ID: 50486 Instrument ID WETCHEM Method: SW7196A

MBLK		Sample ID: MBLK-50486-50486				Units: mg/Kg		Analysis Date: 8/13/2013 01:30 PM		
Client ID:		Run ID: WETCHEM_130813I				SeqNo: 2412687		Prep Date: 8/12/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	U	0.50								

LCS	Sample ID: LCS-50486-50486				Units: mg/Kg		Analysis Date: 8/13/2013 01:30 PM			
Client ID:		Run ID: WETCHEM_130813I			SeqNo: 2412688		Prep Date: 8/12/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.82	0.50	2	0	91	80-120	0			

MS				Sample ID: 13071003-10A MS				Units: mg/Kg			Analysis Date: 8/13/2013 01:30 PM		
Client ID: COL-SB-CSA-15 (0.5'-1.0')				Run ID: WETCHEM_130813I				SeqNo: 2412710		Prep Date: 8/12/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Chromium, Hexavalent	0.6546	0.50	2.008	0.4024	12.6	75-125	0			S			

MSD	Sample ID: 13071003-10A MSD				Units: mg/Kg		Analysis Date: 8/13/2013 01:30 PM			
Client ID: COL-SB-CSA-15 (0.5'-1.0')			Run ID: WETCHEM_130813I		SeqNo: 2412711		Prep Date: 8/12/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.6073	0.51	2.024	0.4024	10.1	75-125	0.6546	7.5	20	S

The following samples were analyzed in this batch:

13071003-01A	13071003-02A	13071003-03A
13071003-04A	13071003-05A	13071003-06A
13071003-07A	13071003-08A	13071003-09A
13071003-10A	13071003-11A	13071003-12A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, LLC
 Work Order: 13071003
 Project: COLLIS Soil Sample

QC BATCH REPORT

Batch ID: R124400 Instrument ID MOIST Method: A2540 G

MBLK		Sample ID: WBLKS-R124400				Units: % of sample		Analysis Date: 7/30/2013		
Client ID:		Run ID: MOIST_130730B				SeqNo: 2397080		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.050								

LCS		Sample ID: LCS-R124400				Units: % of sample		Analysis Date: 7/30/2013		
Client ID:		Run ID: MOIST_130730B				SeqNo: 2397079		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP		Sample ID: 13071003-10A DUP				Units: % of sample		Analysis Date: 7/30/2013		
Client ID: COL-SB-CSA-15 (0.5'-1.0')		Run ID: MOIST_130730B				SeqNo: 2397066		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	27.02	0.050	0	0	0	0-0	28.34	4.77	20	

DUP		Sample ID: 13071017-01A DUP				Units: % of sample		Analysis Date: 7/30/2013		
Client ID:		Run ID: MOIST_130730B				SeqNo: 2397077		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	1.37	0.050	0	0	0	0-0	1.42	3.58	20	

The following samples were analyzed in this batch:

13071003-01A	13071003-02A	13071003-03A
13071003-04A	13071003-05A	13071003-06A
13071003-07A	13071003-08A	13071003-09A
13071003-11A	13071003-12A	13071003-15A
13071003-16A	13071003-17A	13071003-18A
13071003-19A	13071003-21A	13071003-22A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, LLC
 Work Order: 13071003
 Project: COLLIS Soil Sample

QC BATCH REPORT

Batch ID: R124402 Instrument ID MOIST Method: A2540 G

MBLK	Sample ID: WBLKS-R124402				Units: % of sample		Analysis Date: 7/30/2013 04:00 PM			
Client ID:			Run ID: MOIST_130730A		SeqNo: 2397198		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	0.04	0.050								J

LCS	Sample ID: LCS-R124402				Units: % of sample			Analysis Date: 7/30/2013 04:00 PM		
Client ID:		Run ID: MOIST_130730A			SeqNo: 2397182		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP	Sample ID: 13071003-20A DUP				Units: % of sample			Analysis Date: 7/30/2013 04:00 PM		
Client ID: COL-SB-BKGD-06 (05'-1.0')			Run ID: MOIST_130730A		SeqNo: 2397157		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	17.68	0.050	0	0	0	0-0	17.93	1.4	20	

DUP	Sample ID: 13071019-04B DUP				Units: % of sample			Analysis Date: 7/30/2013 04:00 PM		
Client ID:		Run ID: MOIST_130730A			SeqNo: 2397163		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	8.08	0.050	0	0	0	0-0	8.59	6.12	20	

The following samples were analyzed in this batch:

13071003-09A	13071003-20A
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Environmental

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ALS Project Manager:

JOE RIBAR

Work Order #:

13071003

Customer Information			Project Information				Parameter/Method Request for Analysis												
Purchase Order		Project Name	COLLIS SOIL SAMPLE		A	RCRA METALS (6020A)													
Work Order		Project Number			B	MERCURY (7471B)													
Company Name	BB+E	Bill To Company	BB+E		C	HEXAVALENT CHROMIUM (7196A)													
Send Report To	jcabra@bbande.com	Invoice Attn	JASON CABRA		D														
Address	235 EAST MAIN STREET	Address	SAME		E														
City/State/Zip	NORTHVILLE MI 48167	City/State/Zip			F														
Phone	248 489 9636	Phone			G														
Fax	248 489 9646	Fax			H														
e-Mail Address	jcabra@bbande.com	e-Mail Address			I														
					J														
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1✓	COL-SB-CSA-01 (0.5'-1.0')	7/24/13	1050	SOIL	8	1	X	X	X										
2✓	COL-SB-CSA-02 (0.5'-1.0')	7/24/13	0710	SOIL	8	1	X	X	X										
3✓	COL-SB-CSA-03 (0.5'-1.0')	7/24/13	1150	SOIL	8	1	X	X	X										
4✓	COL-SB-CSA-04 (0.5'-1.0')	7/24/13	1310	SOIL	8	1	X	X	X										
5✓	COL-SB-CSA-05 (0.5'-1.0')	7/24/13	1345	SOIL	8	1	X	X	X										
6✓	COL-SB-CSA-05 (0.5'-1.0')-DUP	7/24/13	1345	SOIL	8	1	X	X	X										
7✓	COL-SB-CSA-06 (0.5'-1.0')	7/24/13	1436	SOIL	8	1	X	X	X										
8✓	COL-SB-CSA-07 (0.5'-1.0')	7/24/13	1445	SOIL	8	1	X	X	X										
9✓	COL-SB-CSA-08 (0.5'-1.0')	7/24/13	1510	SOIL	8	1	X	X	X										
10	COL-SB-CSA-09 ()	7/24/13		SOIL	8	1	X	X	X										

Sampler(s): Please Print & Sign JASON CABRA		Shipment Method: FEDEX		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by: Jason Cabra	Date: 7/25/13	Time: 1300	Received by: FEDEX		Notes:		
Relinquished by: FEDEX	Date: 7/26/13	Time: 0930	Received by (Laboratory):		Cooler Temp.		
Logged by (Laboratory): AB	Date: 7/26/13	Time: 1420	Checked by (Laboratory):		QC Package: (Check Box Below)		
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035					Level II: Standard QC		
					Level III: Std QC + Raw Data		
					Level IV: SW846 CLP-Like		
					Other:		

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ALS Project Manager:

Work Order #:

13071003

Customer Information			Project Information				Parameter/Method Request for Analysis												
Purchase Order		Project Name	COLLIS SOIL SAMPLE				A	RCRA METALS (602CA)											
Work Order		Project Number					B	MERCURY (7471B)											
Company Name	BB+E	Bill To Company	BB+E				C												
Send Report To	JASON CABRA	Invoice Attn.	JASON CABRA				D												
Address	235 EAST MAIN STREET	Address	SAME				E												
City/State/Zip	NORTHVILLE, MI 48167	City/State/Zip					F												
Phone	248 489 9636	Phone					G												
Fax	248 489 9646	Fax					H												
e-Mail Address	jcabra@bbande.com	e-Mail Address					I												
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
10	COL-SB-CSA-15(0.5'-1.0')	7/24/13	1750	SOIL	8	1	X	X	X										
11	COL-SB-CSA-15(0.5'-1.0')-DUP	7/24/13	1750	SOIL	8	1	X	X	X										
12	COL-SB-CSA-15(0.5'-1.0') MS/MSD	7/24/13	1750	SOIL	8	1	X	X	X										
24	COL-SB-CSA-14(0.5'-1.0')	7/24/13	1530	SOIL	8	1	X	X	X										
13	COL-RB-C2	7/24/13	1400	WATER	8	1	X	X	X										
14	COL-RB-C3	7/24/13	1815	WATER	8	1	X	X	X										
7																			
8																			
9																			
10																			

Sampler(s): Please Print & Sign JASON CABRA <i>Jason Cabra</i>		Shipment Method: FEDEX	Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour	Results Due Date:
Relinquished by: <i>Jason Cabra</i>	Date: 7/25/13	Time: 1300	Received by: <i>FEDEX</i>	Notes:
Relinquished by: FEDEX	Date: 7/26/13	Time: 0930	Received by (Laboratory): <i>[Signature]</i>	Cooler Temp.: 2.4°C
Logged by (Laboratory): AB	Date: 7/26/13	Time: 1420	Checked by (Laboratory): <i>[Signature]</i>	QC Package: (Check Box Below) <input type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> Level IV: SW846 CLP-Like Other: _____
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035				

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ALS Project Manager:

Work Order #:

13071003

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name		A	RCRA METALS (6020A)											
Work Order		Project Number		B	MERCURY (7471B)											
Company Name	BB+E	Bill To Company	BB+E	C												
Send Report To	JASON CABRA	Invoice Attn.	JASON CABRA	D												
Address	235 EAST MAIN STREET	Address	same	E												
City/State/Zip	NORTHVILLE, MI, 48167	City/State/Zip		F												
Phone	248 489 9636	Phone		G												
Fax	248 489 9646	Fax		H												
e-Mail Address	jcabra@bbande.com	e-Mail Address		I												
				J												

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
15	✓ COL-SB-BKGD-01 (0.5'-1.0')	7/24/13	0710	SOIL	8	1	X	X									X
16	✓ COL-SB-BKGD-02 (0.5'-1.0')	7/24/13	0730	SOIL	8	1	X	X									X
17	✓ COL-SB-BKGD-03 (0.5'-1.0')	7/24/13	0825	SOIL	8	1	X	X									X
18	✓ COL-SB-BKGD-04 (0.5'-1.0')	7/24/13	0850	SOIL	8	1	X	X									X
19	✓ COL-SB-BKGD-05 (0.5'-1.0')	7/24/13	0907	SOIL	8	1	X	X									X
20	✓ COL-SB-BKGD-06 (0.5'-1.0')	7/24/13	0940	SOIL	8	1	X	X									X
21	✓ COL-SB-BKGD-07 (0.5'-1.0')	7/24/13	1015	SOIL	8	1	X	X									X
22	✓ COL-SB-BKGD-06 (0.5'-1.0)-DUP	7/24/13	0940	SOIL	8	1	X	X									X
23	✓ COL-SB-BKGD-06 (0.5'-1.0)MS/MSD	7/24/13	0940	SOIL	8	1	X	X									X
24	✓ COL-RB-01	7/24/13	1000	WATER	3	1	X	X									X

Sampler(s): Please Print & Sign JASON CABRA		Shipment Method: FEDEX		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by: Jason Cabra	Date: 7/25/13	Time: 1300	Received by: FEDEX	Notes:			
Relinquished by: FEDEX	Date: 7/24/13	Time: 0930	Received by (Laboratory):	Cooler Temp. 24°C			
Logged by (Laboratory): AB	Date: 7/24/13	Time: 1420	Checked by (Laboratory):	QC Package: (Check Box Below)			
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035				<input type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> Level IV: SW846 CLP-Like <input type="checkbox"/> Other:			

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Joe Ribar

From: Jason Cabra <jcabra@bbande.com>
Sent: Friday, August 09, 2013 3:53 PM
To: Joe Ribar
Cc: Veronica Allen
Subject: Collis SSW Soil Samples Hex Chrome Analysis (Complete list)

Joe,

I received authorization to inform you to please run the hexavalent chromium analysis on the Collis SSW soil samples. If the hexavalent chromium analysis begins on Monday, we will anticipate the report being submitted on August 16 and the additional analyses cost of \$32 per soil sample (12 samples).

The hexavalent chromium analyses should only be performed on the CSA soil samples (previously analyzed for the RCRA 8 Metals) and not the water rinsate blanks, including the following soil samples:

- COL-SB-CSA-01(0.5'-1.0')
- COL-SB-CSA-02(0.5'-1.0')
- COL-SB-CSA-03(0.5'-1.0')
- COL-SB-CSA-04(0.5'-1.0')
- COL-SB-CSA-05(0.5'-1.0')
- COL-SB-CSA-05(0.5'-1.0') DUP
- COL-SB-CSA-06(0.5'-1.0')
- COL-SB-CSA-07(0.5'-1.0')
- COL-SB-CSA-08(0.5'-1.0')
- COL-SB-CSA-14(0.5'-1.0')
- COL-SB-CSA-15(0.5'-1.0')
- COL-SB-CSA-15(0.5'-1.0') DUP

Please keep the background samples on hold until we receive the hexavalent chromium results.

If you have any questions, please contact me.

Respectfully,

Jason Cabra, CHMM | Civil Engineer

BB&E, LLC | Consulting Engineers & Professionals

235 East Main Street, Suite 107 | Northville, MI 48167

Office 248.489.9636 ext 308 | Cell 248-342-2113 | Fax 248.489.9646

www.bbande.com

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ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **BBE**

Date/Time Received: **26-Jul-13 09:30**

Work Order: **13071003**

Received by: **AB**

Checklist completed by Ashley Beard

26-Jul-13

Reviewed by: Joseph Ribar

29-Jul-13

eSignature

Date

eSignature

Date

Matrices: **soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.4C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>7/26/2013 2:43:19 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	-		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



20-Aug-2013

Jason Cabra
BB&E, LLC
235 East Main Street
Suite 107
Northville, MI 48167

Re: **COLLIS SSW (02028003)**

Work Order: **1308591**

Dear Jason,

ALS Environmental received 8 samples on 15-Aug-2013 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Joseph Ribar".

Electronically approved by: Alex Csaszar

Joseph Ribar
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: BB&E, LLC
Project: COLLIS SSW (02028003)
Work Order: 1308591

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1308591-01	COL-SB-BKGD-01 (0.5'-1.0')	Soil		7/24/2013 07:10	7/26/2013 09:30	<input type="checkbox"/>
1308591-02	COL-SB-BKGD-02 (0.5'-1.0')	Soil		7/24/2013 07:30	7/26/2013 09:30	<input type="checkbox"/>
1308591-03	COL-SB-BKGD-03 (0.5'-1.0')	Soil		7/24/2013 08:25	7/26/2013 09:30	<input type="checkbox"/>
1308591-04	COL-SB-BKGD-04 (0.5'-1.0')	Soil		7/24/2013 08:50	7/26/2013 09:30	<input type="checkbox"/>
1308591-05	COL-SB-BKGD-05 (0.5'-1.0')	Soil		7/24/2013 09:07	7/26/2013 09:30	<input type="checkbox"/>
1308591-06	COL-SB-BKGD-06 (0.5'-1.0')	Soil		7/24/2013 09:40	7/26/2013 09:30	<input type="checkbox"/>
1308591-07	COL-SB-BKGD-07 (0.5'-1.0')	Soil		7/24/2013 10:15	7/26/2013 09:30	<input type="checkbox"/>
1308591-08	COL-SB-BKGD-06 (0.5'-1.0') DUP	Soil		7/24/2013 09:40	7/26/2013 09:30	<input type="checkbox"/>

Client: BB&E, LLC
Project: COLLIS SSW (02028003)
WorkOrder: 1308591

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group USA, Corp

Date: 20-Aug-13

Client: BB&E, LLC
Work Order: 1308591
Project: COLLIS SSW (02028003)
Lab ID: 1308591-01

Client Sample ID: COL-SB-BKGD-01 (0.5'-1.0')
Collection Date: 7/24/2013 7:10:00 AM

Matrix: SOIL

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A				
Arsenic	5.2	0.40	0		mg/Kg-dry	1	Prep Date: 8/16/2013 Analyst: ML 8/16/2013
MOISTURE			A2540 G				
Moisture	11	0.050	0		% of sample	1	Analyst: BD 7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 20-Aug-13

Client: BB&E, LLC
Work Order: 1308591
Project: COLLIS SSW (02028003)
Lab ID: 1308591-02

Client Sample ID: COL-SB-BKGD-02 (0.5'-1.0')
Collection Date: 7/24/2013 7:30:00 AM

Matrix: SOIL

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A			Prep Date: 8/16/2013	Analyst: ML
Arsenic	3.8	0.45	0		mg/Kg-dry	1	8/16/2013
MOISTURE			A2540 G				Analyst: BD
Moisture	12	0.050	0		% of sample	1	7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 20-Aug-13

Client: BB&E, LLC
Work Order: 1308591
Project: COLLIS SSW (02028003)
Lab ID: 1308591-03

Client Sample ID: COL-SB-BKGD-03 (0.5'-1.0')
Collection Date: 7/24/2013 8:25:00 AM

Matrix: SOIL

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A				
Arsenic	2.3	0.42	0		mg/Kg-dry	1	Prep Date: 8/16/2013 Analyst: ML 8/16/2013
MOISTURE			A2540 G				
Moisture	12	0.050	0		% of sample	1	Analyst: BD 7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 20-Aug-13

Client: BB&E, LLC
Work Order: 1308591
Project: COLLIS SSW (02028003)
Lab ID: 1308591-04

Client Sample ID: COL-SB-BKGD-04 (0.5'-1.0')
Collection Date: 7/24/2013 8:50:00 AM

Matrix: SOIL

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A			Prep Date: 8/16/2013	Analyst: ML
Arsenic	5.0	0.37	0		mg/Kg-dry	1	8/16/2013
MOISTURE			A2540 G				Analyst: BD
Moisture	15	0.050	0		% of sample	1	7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 20-Aug-13

Client: BB&E, LLC
Work Order: 1308591
Project: COLLIS SSW (02028003)
Lab ID: 1308591-05

Client Sample ID: COL-SB-BKGD-05 (0.5'-1.0')
Collection Date: 7/24/2013 9:07:00 AM

Matrix: SOIL

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A				
Arsenic	3.5	0.46	0		mg/Kg-dry	1	Prep Date: 8/16/2013 Analyst: ML 8/16/2013
MOISTURE			A2540 G				
Moisture	18	0.050	0		% of sample	1	Analyst: BD 7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 20-Aug-13

Client: BB&E, LLC
Work Order: 1308591
Project: COLLIS SSW (02028003)
Lab ID: 1308591-06

Client Sample ID: COL-SB-BKGD-06 (0.5'-1.0')
Collection Date: 7/24/2013 9:40:00 AM

Matrix: SOIL

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A				
Arsenic	3.4	0.41	0		mg/Kg-dry	1	Prep Date: 8/16/2013 Analyst: ML 8/16/2013
MOISTURE			A2540 G				
Moisture	18	0.050	0		% of sample	1	Analyst: BD 7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 20-Aug-13

Client: BB&E, LLC
Work Order: 1308591
Project: COLLIS SSW (02028003)
Lab ID: 1308591-07

Client Sample ID: COL-SB-BKGD-07 (0.5'-1.0')
Collection Date: 7/24/2013 10:15:00 AM

Matrix: SOIL

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A				
Arsenic	2.0	0.38	0		mg/Kg-dry	1	Prep Date: 8/16/2013 Analyst: ML 8/16/2013
MOISTURE			A2540 G				
Moisture	8.7	0.050	0		% of sample	1	Analyst: BD 7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 20-Aug-13

Client: BB&E, LLC
Work Order: 1308591
Project: COLLIS SSW (02028003)
Lab ID: 1308591-08

Client Sample ID: COL-SB-BKGD-06 (0.5'-1.0') D
Collection Date: 7/24/2013 9:40:00 AM

Matrix: SOIL

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A				
Arsenic	3.9	0.49	0		mg/Kg-dry	1	Prep Date: 8/16/2013 Analyst: ML 8/16/2013
MOISTURE			A2540 G				
Moisture	22	0.050	0		% of sample	1	Analyst: BD 7/30/2013

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: BB&E, LLC
 Work Order: 1308591
 Project: COLLIS SSW (02028003)

QC BATCH REPORT

Batch ID: 50604 Instrument ID ICPMS1 Method: SW6020A

MBLK	Sample ID: MBLK-50604-50604				Units: mg/Kg		Analysis Date: 8/16/2013 03:02 PM			
Client ID:	Run ID: ICPMS1_130816A				SeqNo: 2416478		Prep Date: 8/16/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								

LCS	Sample ID: LCS-50604-50604				Units: mg/Kg		Analysis Date: 8/16/2013 01:46 PM			
Client ID:	Run ID: ICPMS1_130816A				SeqNo: 2416300		Prep Date: 8/16/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.502	0.25	5	0	90	80-120	0			

MS	Sample ID: 1308557-04BMS				Units: mg/Kg		Analysis Date: 8/16/2013 01:58 PM			
Client ID:	Run ID: ICPMS1_130816A				SeqNo: 2416302		Prep Date: 8/16/2013		DF: 4	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.61	1.3	6.605	5.465	93	75-125	0			

MSD	Sample ID: 1308557-04BMSD				Units: mg/Kg		Analysis Date: 8/16/2013 02:23 PM			
Client ID:	Run ID: ICPMS1_130816A				SeqNo: 2416473		Prep Date: 8/16/2013		DF: 4	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.52	1.3	6.702	5.465	90.4	75-125	11.61	0.745	25	

The following samples were analyzed in this batch:

1308591-01A	1308591-02A	1308591-03A
1308591-04A	1308591-05A	1308591-06A
1308591-07A	1308591-08A	

Client: BB&E, LLC
 Work Order: 1308591
 Project: COLLIS SSW (02028003)

QC BATCH REPORT

Batch ID: R124400 Instrument ID MOIST Method: A2540 G

MBLK		Sample ID: WBLKS-R124400				Units: % of sample		Analysis Date: 7/30/2013		
Client ID:		Run ID: MOIST_130730B				SeqNo: 2397080		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS		Sample ID: LCS-R124400				Units: % of sample		Analysis Date: 7/30/2013		
Client ID:		Run ID: MOIST_130730B				SeqNo: 2397079		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP		Sample ID: 13071003-10A DUP				Units: % of sample		Analysis Date: 7/30/2013		
Client ID:		Run ID: MOIST_130730B				SeqNo: 2397066		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	27.02	0.050	0	0	0	0-0	28.34	4.77	20	

DUP		Sample ID: 13071017-01A DUP				Units: % of sample		Analysis Date: 7/30/2013		
Client ID:		Run ID: MOIST_130730B				SeqNo: 2397077		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	1.37	0.050	0	0	0	0-0	1.42	3.58	20	

The following samples were analyzed in this batch:

1308591-01A	1308591-02A	1308591-03A
1308591-04A	1308591-05A	1308591-07A
1308591-08A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: BB&E, LLC
 Work Order: 1308591
 Project: COLLIS SSW (02028003)

QC BATCH REPORT

Batch ID: R124402 Instrument ID MOIST Method: A2540 G

MBLK		Sample ID: WBLKS-R124402				Units: % of sample		Analysis Date: 7/30/2013 04:00 PM		
Client ID:		Run ID: MOIST_130730A				SeqNo: 2397198		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	0.04	0.050								J

LCS				Sample ID: LCS-R124402				Units: % of sample				Analysis Date: 7/30/2013 04:00 PM											
Client ID:				Run ID: MOIST_130730A				SeqNo: 2397182				Prep Date:				DF: 1							
Analyte				Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit		RPD Ref Value		%RPD		RPD Limit		Qual	
Moisture				100		0.050		100		0		100		99.5-100.5		0							

DUP	Sample ID: 13071003-20A DUP					Units: % of sample		Analysis Date: 7/30/2013 04:00 PM		
Client ID:	Run ID: MOIST_130730A				SeqNo: 2397157		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	17.68	0.050	0	0	0	0-0	17.93	1.4	20	

DUP	Sample ID: 13071019-04B DUP					Units: % of sample		Analysis Date: 7/30/2013 04:00 PM		
Client ID:	Run ID: MOIST_130730A				SeqNo: 2397163		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	8.08	0.050	0	0	0	0-0	8.59	6.12	20	

The following samples were analyzed in this batch:

1308591-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Environmental

Chain of Custody Form

Page 1 of 3

COC ID: 01208

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

ALS Project Manager:

Work Order #: 13071003

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name		A	RCRA METALS (6020A)											
Work Order		Project Number		B	MERCURY (7471B)											
Company Name	BB+E	Bill To Company	BB+E	C	TOTAL ARSENIC											
Send Report To	JASON CABRA	Invoice Attn	JASON CABRA	D	MOISTURE											
Address	235 EAST MAIN STREET	Address	same	E												
City/State/Zip	NORTHVILLE, MI, 48167	City/State/Zip		F												
Phone	248 489 9636	Phone		G												
Fax	248 489 9646	Fax		H												
e-Mail Address	jcabra@bbande.com	e-Mail Address		I												
				J												

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
15	COL-SB-BKGD-01 (0.5'-1.0')	7/24/13	0710	SOIL	8	1	X	X	X	X							X
16	COL-SB-BKGD-02 (0.5'-1.0')	7/24/13	0730	SOIL	8	1	X	X	X	X							X
17	COL-SB-BKGD-03 (0.5'-1.0')	7/24/13	0825	SOIL	8	1	X	X	X	X							X
18	COL-SB-BKGD-04 (0.5'-1.0')	7/24/13	0850	SOIL	8	1	X	X	X	X							X
19	COL-SB-BKGD-05 (0.5'-1.0')	7/24/13	0907	SOIL	8	1	X	X	X	X							X
20	COL-SB-BKGD-06 (0.5'-1.0')	7/24/13	0940	SOIL	8	1	X	X	X	X							X
21	COL-SB-BKGD-07 (0.5'-1.0')	7/24/13	1015	SOIL	8	1	X	X	X	X							X
22	COL-SB-BKGD-06 (0.5'-1.0')-DUP	7/24/13	0940	SOIL	8	1	X	X	X	X							X
23	COL-SB-BKGD-06 (0.5'-1.0')MS/MSD	7/24/13	0940	SOIL	8	1	X	X	X	X							X
24	COL-RB-01	7/24/13	1000	WATER	3	1	X	X	X	X							X

Sampler(s): Please Print & Sign <u>JASON CABRA</u>		Shipment Method: <u>FEDEx</u>		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by: <u>JASON CABRA</u>	Date: <u>7/25/13</u>	Time: <u>1300</u>	Received by: <u>FEDEx</u>		Notes:		
Relinquished by: <u>FEDEx</u>	Date: <u>7/26/13</u>	Time: <u>0930</u>	Received by (Laboratory): <u>[Signature]</u>		Cooler Temp. <u>24°C</u>		
Logged by (Laboratory): <u>ARB</u>	Date: <u>7/26/13</u>	Time: <u>1420</u>	Checked by (Laboratory): <u>[Signature]</u>		QC Package: (Check Box Below)		
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035					Level II: Standard QC		
					Level III: Std QC + Raw Data		
					Level IV: SW846 CLP-Like		
					Other:		

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Chain of Custody Form

Page 1 of 3

COC ID: 01205

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

ALS Project Manager:

JOE RIBAR

Work Order #:

13071003

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name	COLLIS SOIL SAMPLE	A	RCRA METALS (6020A)											
Work Order		Project Number		B	MERCURY (7471B)											
Company Name	BB+E	Bill To Company	BB+E	C	HEXAVALENT CHROMIUM (7196A)											
Send Report To	jcabra@bbande.com	Invoice Attn	JASON CABRA	D												
Address	235 EAST MAIN STREET	Address	SAME	E												
City/State/Zip	NORTHVILLE MI 48167	City/State/Zip		F												
Phone	248 489 9636	Phone		G												
Fax	248 489 9646	Fax		H												
e-Mail Address	jcabra@bbande.com	e-Mail Address		I												
				J												

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1V	COL-SB-CSA-01 (0.5'-1.0')	7/24/13	1050	SOIL	8	1	X	X	X								
2V	COL-SB-CSA-02 (0.5'-1.0')	7/24/13	1125	SOIL	8	1	X	X	X								
3V	COL-SB-CSA-03 (0.5'-1.0')	7/24/13	1150	SOIL	8	1	X	X	X								
4V	COL-SB-CSA-04 (0.5'-1.0')	7/24/13	1310	SOIL	8	1	X	X	X								
5V	COL-SB-CSA-05 (0.5'-1.0')	7/24/13	1345	SOIL	8	1	X	X	X								
6V	COL-SB-CSA-05 (0.5'-1.0') - DUP	7/24/13	1345	SOIL	8	1	X	X	X								
7V	COL-SB-CSA-06 (0.5'-1.0')	7/24/13	1436	SOIL	8	1	X	X	X								
8V	COL-SB-CSA-07 (0.5'-1.0')	7/24/13	1445	SOIL	8	1	X	X	X								
9V	COL-SB-CSA-08 (0.5'-1.0')	7/24/13	1510	SOIL	8	1	X	X	X								
10	COL-SB-CSA-09 ()	7/24/13		SOIL	8	1	X	X	X								

Sampler(s): Please Print & Sign JASON CABRA		Shipment Method: FEDEX	Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour	Results Due Date:
--	--	---------------------------	--	-------------------

Relinquished by: Jason Cabra	Date: 7/25/13	Time: 1300	Received by: FEDEX	Notes:
Relinquished by: FEDEX	Date: 7/26/13	Time: 0930	Received by (Laboratory): [Signature]	Cooler Temp.
Logged by (Laboratory): AB	Date: 7/26/13	Time: 1420	Checked by (Laboratory): [Signature]	QC Package: (Check Box Below)
				Level II: Standard QC
				Level III: Std QC + Raw Data
				Level IV: SW846 CLP-Like
				Other:

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

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Chain of Custody Form

Page 2 of 3

COC ID: 01209

☐ Cincinnati, OH
+1 513 733 5336

☐ Everett, WA
+1 425 356 2600

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 399 6070

☐ Houston, TX
+1 281 530 5656

☐ Middletown, PA
+1 717 944 5541

☐ Salt Lake City, UT
+1 801 266 7700

☐ Spring City, PA
+1 610 948 4903

☐ York, PA
+1 717 505 5280

ALS Project Manager:

Work Order #: 13071003

Customer Information		Project Information		Parameter/Method Request for Analysis														
Purchase Order		Project Name	COLLIS SOIL SAMPLE	A	RCRA METALS (6020A)													
Work Order		Project Number		B	MERCURY (7471B)													
Company Name	BB+E	Bill To Company	BB+E	C														
Send Report To	JASON CABRA	Invoice Attn:	JASON CABRA	D														
Address	235 EAST MAIN STREET	Address		E														
City/State/Zip	NORTHVILLE, MI 48167	City/State/Zip	SAME	F														
Phone	248 489 9636	Phone		G														
Fax	248 489 9646	Fax		H														
e-Mail Address	jcabra@bbande.com	e-Mail Address		I														
				J														
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
10	COL-SB-CSA-15(0.5'-1.0')	7/24/13	1750	SOIL	8	1	X	X	X									
11	COL-SB-CSA-15(0.5'-1.0')-DUP	7/24/13	1750	SOIL	8	1	X	X	X									
12	COL-SB-CSA-15(0.5'-1.0') MS/MSD	7/24/13	1750	SOIL	8	1	X	X	X									
13	COL-SB-CSA-14(0.5'-1.0')	7/24/13	1530	SOIL	8	1	X	X	X									
14	COL-RB-C2	7/24/13	1400	WATER	8	1	X	X	X									
15	COL-RB-C3	7/24/13	1815	WATER	8	1	X	X	X									
7																		
8																		
9																		
10																		
Sampler(s): Please Print & Sign JASON CABRA		Shipment Method: FEDEX		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Results Due Date:										
Relinquished by: JASON CABRA	Date: 7/25/13	Time: 1300	Received by: FEDEX				Notes:											
Relinquished by: FEDEX	Date: 7/26/13	Time: 0930	Received by (Laboratory): [Signature]				Cooler Temp. 24°C	QC Package: (Check Box Below)										
Logged by (Laboratory): [Signature]	Date: 7/26/13	Time: 1420	Checked by (Laboratory): [Signature]					<input type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> Level IV: SW846 CLP-Like Other:										
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035																		

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Joe Ribar

From: Jason Cabra <jcabra@bbande.com>
Sent: Thursday, August 15, 2013 11:22 AM
To: Joe Ribar
Cc: Veronica Allen
Subject: RE: 13071003 COLLIS Soil Sample

Joe,

Per your earlier request from Veronica Allen, here is the list of background soil samples from the Collis SSW location that will need Arsenic analyses performed.

✓1	COL-SB-BKGD-01(0.5'-1.0')	(15)	13071003
-2	COL-SB-BKGD-02(0.5'-1.0')	(16)	
3	COL-SB-BKGD-03(0.5'-1.0')	(17)	
-4	COL-SB-BKGD-04(0.5'-1.0')	(18)	
5	COL-SB-BKGD-05(0.5'-1.0')	(19)	
6	COL-SB-BKGD-06(0.5'-1.0')	(20)	
-7	COL-SB-BKGD-07(0.5'-1.0')	(21)	
8	COL-SB-BKGD-06(0.5'-1.0')-DUP	(22)	

All samples were collected on 07/24/2013 and are listed in COC #01208. Please use the standard 5-day turnaround time.

Also, would you please provide this analyses in a separate stand-alone report from previous analyses performed for this sampling event and a separate billing invoice.

If you have any questions, please contact me.

Thanks,

Jason Cabra, CHMM | Civil Engineer

BB&E, LLC | Consulting Engineers & Professionals
 235 East Main Street, Suite 107 | Northville, MI 48167
 Office 248.489.9636 ext 308 | Cell 248-342-2113 | Fax 248.489.9646
www.bbände.com

From: Veronica Allen
Sent: Wednesday, August 14, 2013 9:10 PM
To: Joe Ribar
Cc: Jason Cabra
Subject: Re: 13071003 COLLIS Soil Sample

Will do

On Aug 14, 2013, at 8:39 PM, "Joe Ribar" <Joe.Ribar@alsglobal.com> wrote:

Sounds good, Veronica. If you can please send me an email with the samples you would like analyzed, I would appreciate it. I just need it as documentation for the file.

Have a good night!

Sample Receipt Checklist

Client Name: BBE

Date/Time Received: 15-Aug-13 14:15

Work Order: 1308591

Received by: KRW

Checklist completed by Keith Wurenga
eSignature

15-Aug-13
Date

Reviewed by: Joseph Libar
eSignature

15-Aug-13
Date

Matrices: Soil

Carrier name: ALSHN

Shipping container/cooler in good condition?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.0 C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>8/15/2013 2:23:21 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes: From previous WO#13071003. Stored in the walk-in cooler.

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

APPENDIX D

General UCL Statistics for Full Data Sets	
User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

senic Background (mg/kg)

General Statistics			
Number of Valid Observations		7	
Number of Distinct Observations		7	
Raw Statistics		Log-transformed Statistics	
Minimum	2	Minimum of Log Data	0.693
Maximum	5.2	Maximum of Log Data	1.649
Mean	3.6	Mean of log Data	1.228
Geometric Mean	3.414	SD of log Data	0.36
Median	3.5		
SD	1.215		
Std. Error of Mean	0.459		
Coefficient of Variation	0.338		
Skewness	0.071		

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.929	Shapiro Wilk Test Statistic	0.923
Shapiro Wilk Critical Value	0.803	Shapiro Wilk Critical Value	0.803
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	4.492	95% H-UCL	5.087
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	5.752
95% Adjusted-CLT UCL (Chen-1995)	4.369	97.5% Chebyshev (MVUE) UCL	6.68
95% Modified-t UCL (Johnson-1978)	4.495	99% Chebyshev (MVUE) UCL	8.503
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	5.582	Data appear Normal at 5% Significance Level	
Theta Star	0.645		

[illegible]



January 27, 2014

SENT VIA FEDEX

Mr. Kevin D. Snowden, Project Manager
U.S. Environmental Protection Agency
11201 Renner Blvd.
Lenexa, Kansas 66219

Subject: Final – *Resource Conservation and Recovery Act Soil Sampling Summary Report*
(Docket No. RCRA-07-2012-0014)

Dear Mr. Snowden,

BB&E, L.L.C. is pleased to submit one hard copy and one electronic copy (on CD) of the *Final Resource Conservation and Recovery Act Soil Sampling Summary Report*, per your request.

If you have any questions concerning this document, or any other issues regarding this project, please call me at (248) 489-9636, Extension 309.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Colmer". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jim Colmer, P.E.

AWMD / WEMM

JAN 30 2014

RECEIVED

cc:

Mr. Brian Calhoun – transmittal letter
Ms. Andrea Stone – 1 hardcopy and 1 electronic copy (on CD)



235 East Main Street, Suite 107, Northville, MI p 248.489.9636 f 248.489.9646 www.bbande.com



235 E. Main St, Suite 107

Northville, MI 48167

248.489.9636

Final

Resource Conservation
and Recovery Act

Soil Sampling

Summary Report

January 2014

CD-ROM